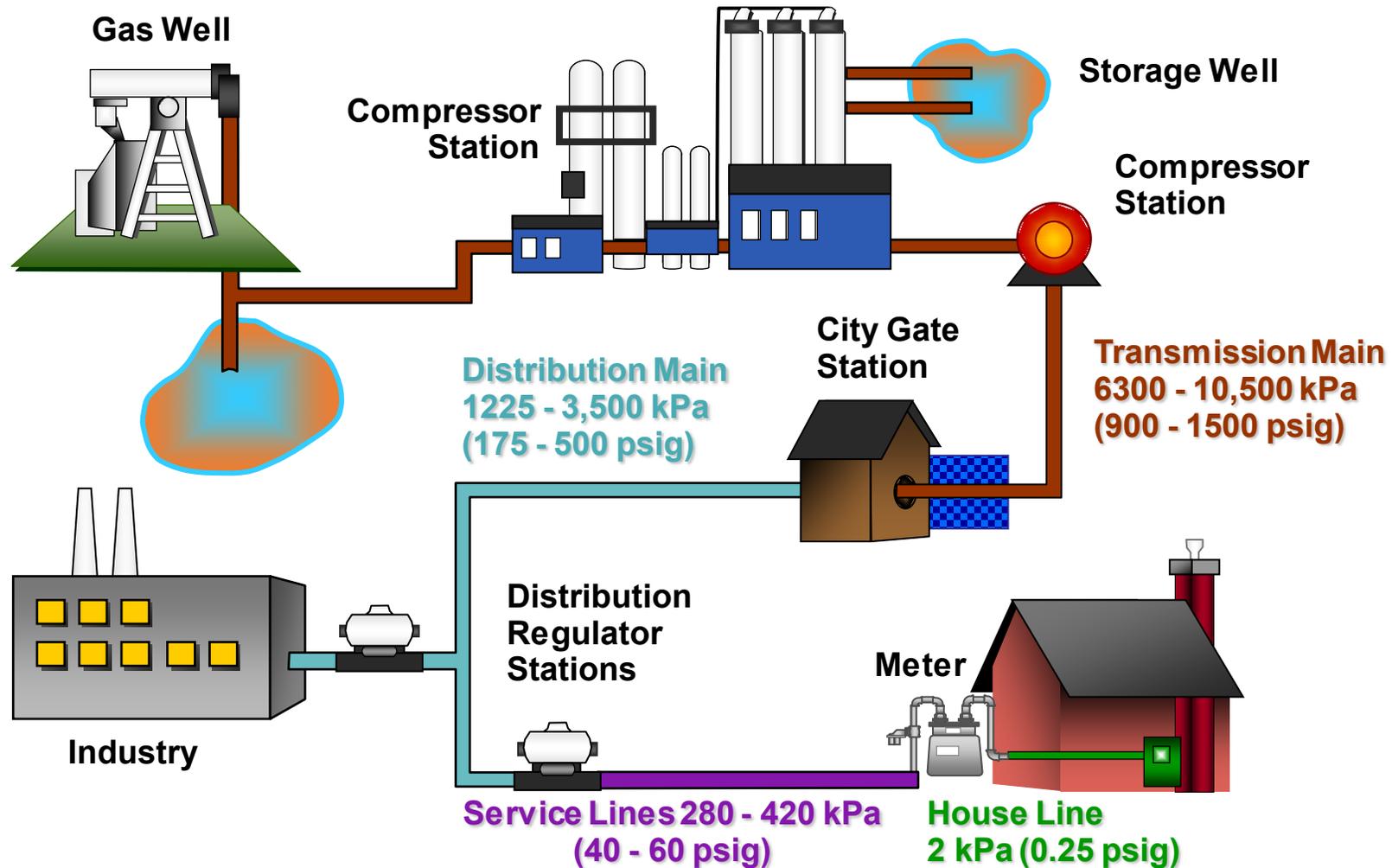


Natural Gas Distribution System 101

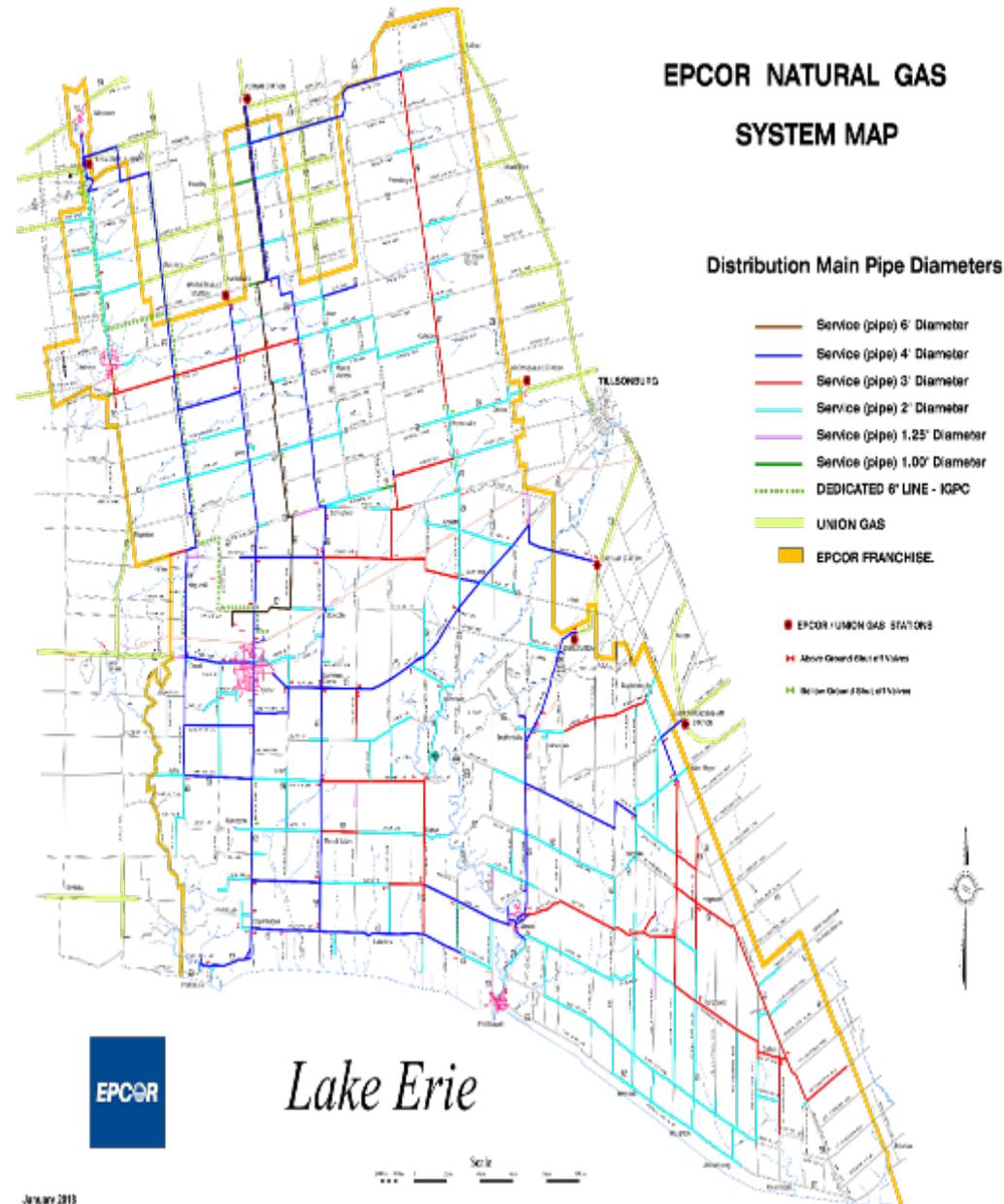
FEI WG July 9, 2021



Natural Gas System – from well to burner tip

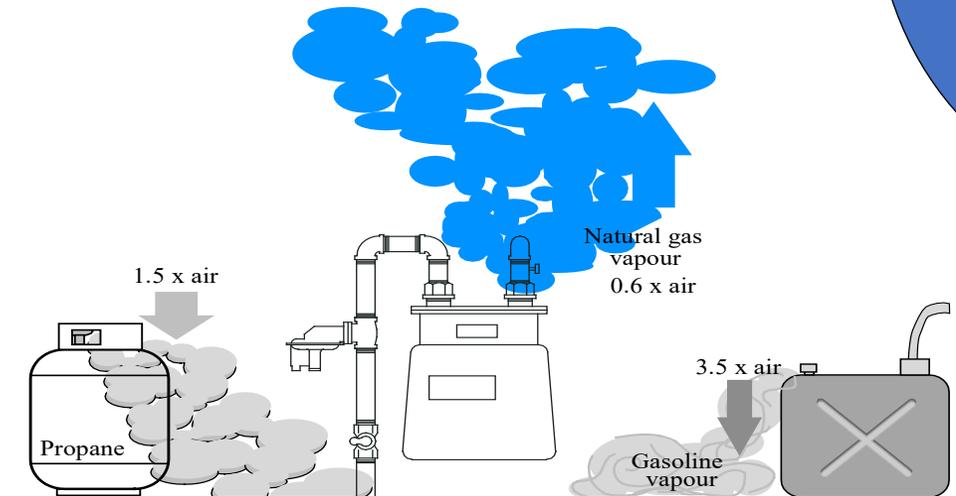
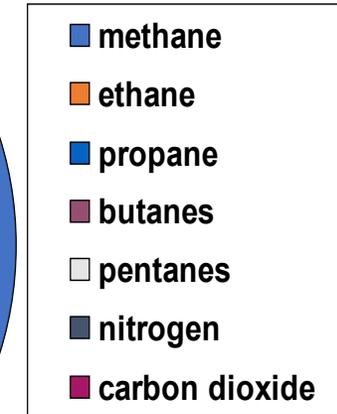
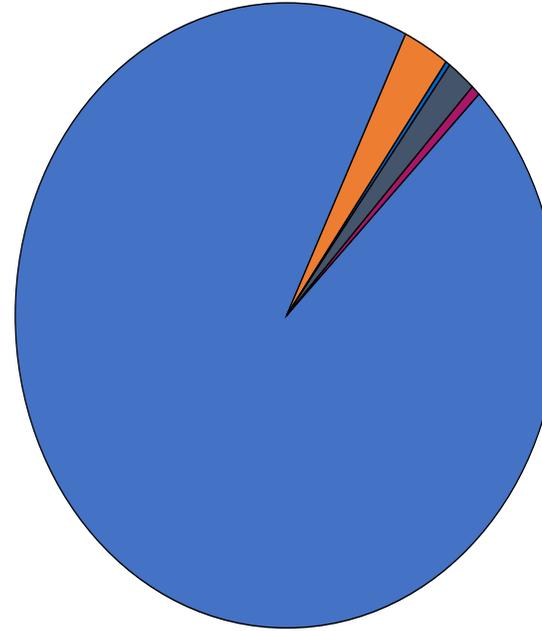


Example Distribution System



Properties of Natural Gas

- 40% lighter than air
- Non toxic
- Odourless
- Colourless
- Tasteless



Properties of Natural Gas

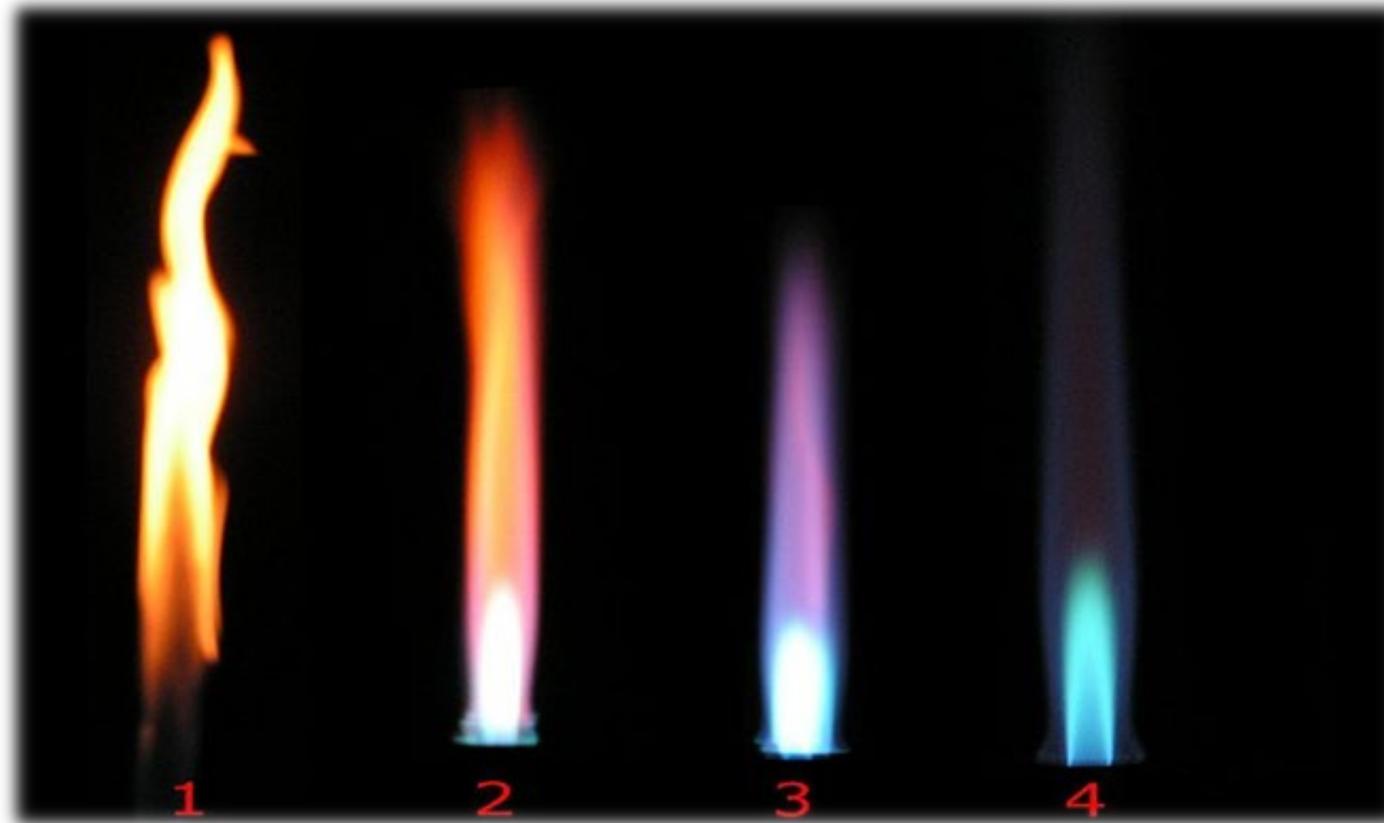
Property	Natural Gas	Propane Gas	Gasoline Vapour	Carbon Monoxide
Toxic	no	no	yes	yes
Flammable	yes	yes	yes	yes
Flammable Range in Air by percent volume	4%-15%	2.29% - 9.5%	1.3% - 7.1%	12% - 74%
Ignition Temp. F	1,100 - 1,200	898 - 986	536 - 853	1,202 - 1,211
Ignition Temp. C	593 - 649	481 - 530	280 - 456	650 - 655
Relative Density (vapour)	0.60	1.50	3.50	0.97

1 % volume = 10,000 PPM

Products of Combustion

Incomplete Combustion

Complete Combustion



Gas Distribution System – EPCOR

Key Natural Gas Installations

- Pipelines: Identification, type, size, pressure
- Meters: Type (Commercial/Residential)
- City Gate Station/ Town Border Station
- District Regulator Station
- Feeder Station / Post Regulator Station
- Farm Tap or Property Post Regulator

Gas Distribution System

Pipeline Material- Steel

- Colour:
 - PE Coated Steel
 - Coated & wrapped (black)
 - Epoxy (green)
- Size range: ½” to 48”
- Pressure: Up to 1000 psi (6900 kPA)



Gas Distribution System

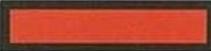
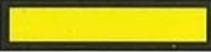
Pipeline Material- Polyethylene (Plastic)

- Colour: yellow, orange, tan (for older installations)
- Size Range: ½” to 10”
- Pressure: Up to 100psi (690 kPA)



Gas Distribution System

**COLOUR CODE
FOR MARKING
UNDERGROUND UTILITY LINES**

	ELECTRIC
	GAS-OIL-STEAM
	COMMUNICATION CATV
	WATER
	SEWER
	TEMPORARY SURVEY MARKINGS
	PROPOSED EXCAVATION

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www.on1call.com
24 hours/7 days



Gas Distribution System

Residential Gas Meter

Each meter has its own shut-off valve



Commercial Gas Meter

The service line riser has a shut-off valve



Gas Distribution System

City Gate Station/Town Border Station (Dornoch Station)

A large facility that marks the point where gas leaves transmission system and enters distribution system



Transition inlet pressure (1000psi) then a reduced outlet pressure

Gas Distribution System

Feeder/Post Regulator Station



Gas Distribution System

Farm Tap or Property Post Regulator



Gas Distribution System

District Regulator Station



Gas Distribution System

Vertical Subdivisions: high rise and townhouse



In a high-rise “vertical subdivision”, utility owned piping is run throughout the building

Outside service shut off valve will shut down the whole complex

Questions



Kincardine - EPCOR's Greenfield Natural Gas Distribution Utility