Incident Summary 5622975

SUPPORTING INFORMATION	Incident Date		*October 23, 2017*
	Location		*Prince George*
	Regulated industry sector		*Gas*
	Impact – Injury	Qty injuries	*1*
		Injury description	*A Person had mild flu-like symptoms with nausea, mild headache and disorientation.*
		Injury rating	*Minor*
	Impact – Damage	Damage description	*None*
		Damage rating	*None*
	Incident rating		*Minor*
	Incident overview		*Excessive Carbon Monoxide was detected by gas utility technician. The gas was shut off at meter.*
INVESTIGATION CONCLUSIONS	Site, system and components		*An atmospheric boiler and water heater utilize gas burners to heat water as a medium. Both appliances require outside air in order to function properly. Each atmospheric appliance contained a draft hood to assist in the venting of flue products and protect the appliance from back drafting. The appliances were individually vented into a common vent to covey flue gases to the outdoors. Air was supplied from the outdoors to the appliance location.* *Appliance — a device to convert gas into energy; the term includes any component, control, wiring, piping, or tubing required to be part of the device.* *Category I appliance — an appliance that operates with a non-positive vent static pressure and with a flue loss not less than 17%.* *Note: This category consists of draft-hood-equipped appliances, appliances labelled as Category I, and fan-assisted appliances for venting into Type B vents.* *Burner — a device or group of devices that forms an integral unit for the introduction of gas, with or without air or oxygen, into the combustion zone for ignition.* *Natural-draft burner — a burner that is not equipped with a mechanical device for supplying combustion air.* *Draft hood — a draft-control device having neither movable nor adjustable parts. A draft hood may be built into an appliance, attached to an appliance, or made part of a vent connector. It is designed to:* *(a) ensure the ready escape of flue gases from the combustion chamber in the event of either no draft or stoppage downstream from the draft hood;* *(b) prevent a backdraft from entering the combustion chamber of the appliance; and* *(c) neutralize the effect of stack action of either a chimney or a vent upon the operation of the appliance.*

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	Air supply (with respect to the installation of an appliance) — combustion air, excess air, flue gas dilution air, primary air, secondary air, and ventilation air. *Combustion air — the air required for satisfactory combustion of gas, including excess air*
Failure scenario(s)	*It is possible that the gas appliances were not properly maintained over the course of their lifetime, in turn causing the improper combustion to occur. A plugged heat exchanger or improper venting action were likely the cause of carbon monoxide entering the living space.*
Facts and evidence	• *Gas utility had shut off meter due to higher than normal levels of carbon monoxide in the draft hood vent area of water heater and boiler.* • *Occupant complained of dizziness and disorientation and was treated at hospital for Carbon monoxide exposure.* • *Gas contractor had replaced water heater and serviced boiler before safety officer attended site*
Causes and contributing factors	*It is possible that improper combustion occurred due to lack of maintenance of gas appliances, In turn excessive Carbon Monoxide was produced and spilled into the living space from the draft hood or burner compartment.*

Photos or diagrams (if necessary)