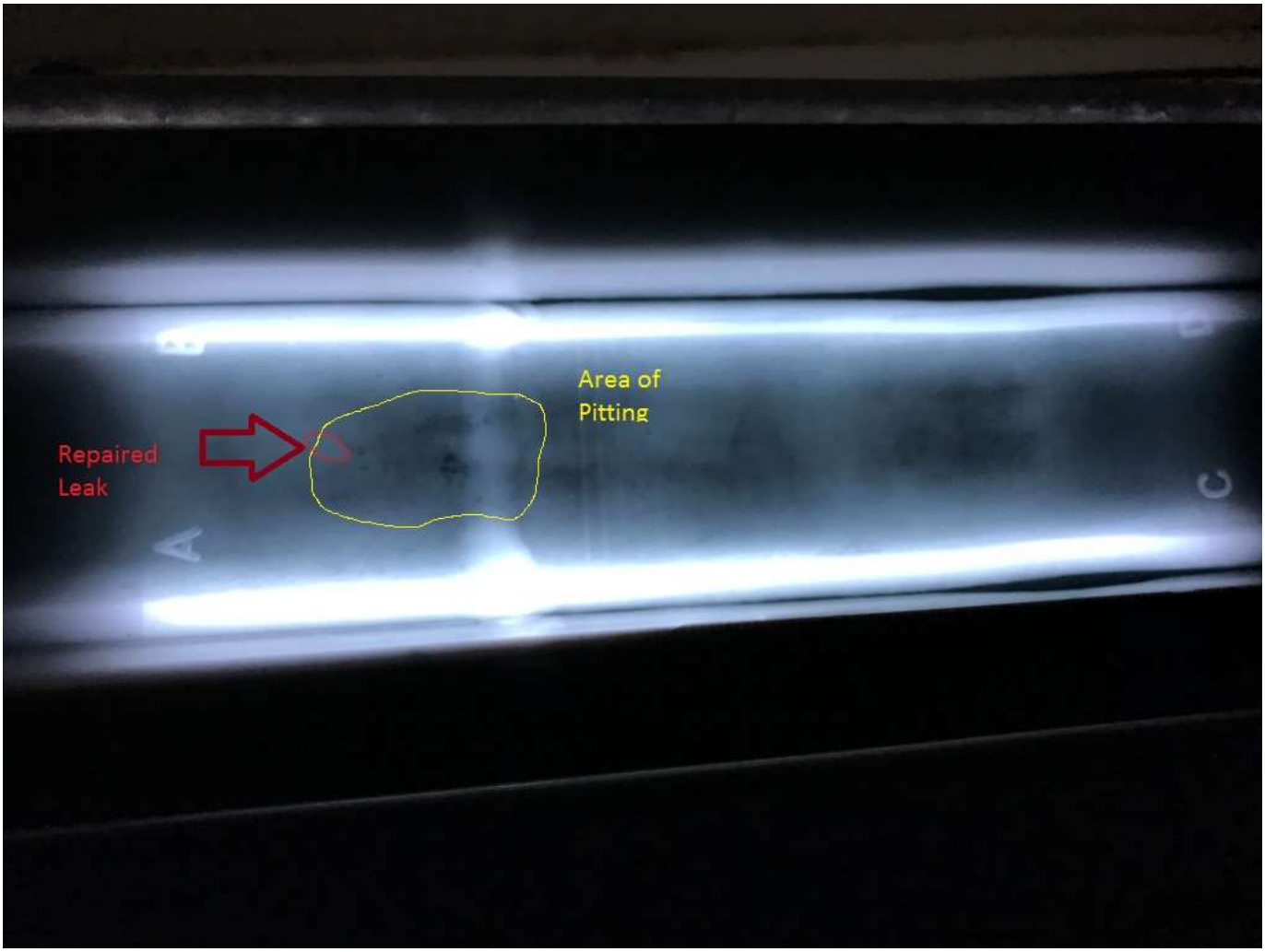
Incident Summary (II-696340-2018)

SUPPORTING INFORMATION	Incident Date		*June 02, 2018*
	Location		*Prince George*
	Regulated industry sector		*Boiler and Pressure Vessel system.*
	Impact – Injury	Qty injuries	*None*
		Injury description	*None*
		Injury rating	*None*
	Impact – Damage	Damage description	*Leak in Furnace wall tube.*
		Damage rating	*Moderate*
	Incident rating		*Moderate*
	Incident overview		*The emergency shutdown procedure was initiated when a tube leak was identified in the Recovery Boiler furnace.*
INVESTIGATION CONCLUSIONS	Site, system and components		*In a Pulp Mill Recovery Boiler, the carbon steel boiler tubes contain the water which is heated by the combustion of black liquor within the furnace. During the combustion process smelt is formed within the furnace and when exposed to water may cause an explosion.* *Black liquor is the waste product from the kraft process when digesting pulpwood into paper pulp removing lignin, hemicelluloses and other extractives from the wood to free the cellulose fibers. The smelt (green liquor) results after the combustion of the black liquor.*
	Failure scenario(s)		*A pin hole sized leak occurred in the boiler water wall tube allowing water to escape into the furnace.*
	Facts and evidence		*At the location of the leak, which occurred on the left wall on Tube 103 at approximately 6 feet above the floor, external localized thinning was present and corrosion resistant metal spray coating had not been applied as with the adjacent tubes. Non-Destructive examination determined that internal pitting was also present at the leak location.*
	Causes and contributing factors		*It is highly probable that the lack of corrosion resistant metal spray coating on this tube allowed external corrosion to occur and combined with the internal pitting resulted in the tube wall thinning to the point of a leak occurring.*

Photos or diagrams (if necessary)


Area of
Pitting
Repaired
Leak