AESSEAL®
ENVIRONMENTAL TECHNOLOGY

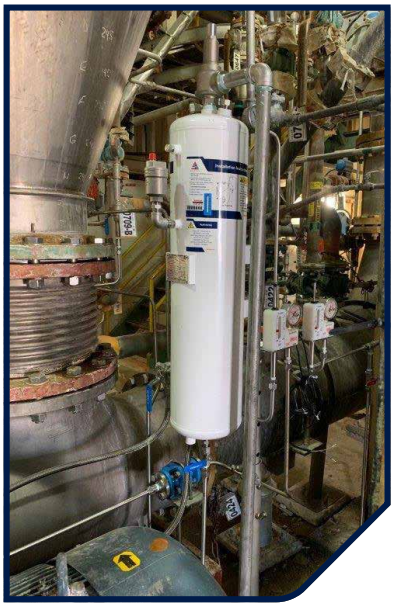
Preventing toxic leakage and improving reliability

A major paper mill in Canada were having on going issues with the sealing of their Chlorine Dioxide Generator recirculation pump. Having tried mechanical seals from other manufacturers without success, the customer had resorted to using gland packing and a 'Pack-Ryt' bushing.

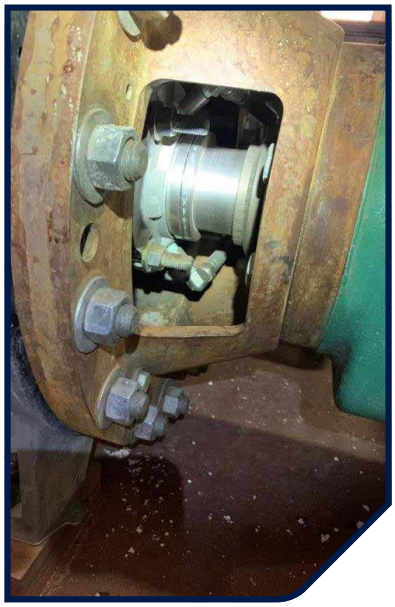
Leakage from the gland packing, coupled with the leakage as a result of multiple earlier seal failures was leading to excessive corrosion of the pump and its mounting base. In addition, the highly toxic nature of the process fluid was a serious safety hazard and lead to the triggering of multiple gas alarms and local area evacuations.

Before

Before



During



After

'Less downtime, more reliability'

Industry:	Pulp & Paper
Product:	CDSA™ and Water Management System
Application:	Chlorine Dioxide Generator recirculation pump
MTBF Increase:	1 year and counting
Reference N.O:	CS0022

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The sealing failures caused several scheduled and unscheduled shut downs either to change the seals or latterly to adjust / repack packing. These shut downs in some instances affected mill production, and the costs (production losses and maintenance) placed these pumps amongst the mills worst bad actors. Clearly a better solution for sealing the pump needed to be found. The customer approached AESSEAL Canada to see if they could help.

AESSEAL® have a lot of experience successfully sealing this application in paper mills and recommended the CDSA™ dual seal with titanium wetted parts along with a Water Management System c/w stainless steel tank with integral cooling coil, and fittings due to the corrosive atmosphere. The water management system was fitted with flow meters and 1 micron water filters to ensure that the water fed to the seal was clean and free of particulate. The pump stuffing box was fitted with restriction bushing and the pump base was repaired.

The AESSEAL® Water Management System provides a clean barrier fluid to the seal via a semi-closed loop. By monitoring the flow rate into the Water Management System tank from the plant water line, upset conditions can be detected. In normal operation the flow should be almost zero as the cold water feed is required to top up water lost due to the minimal escape across the seal faces (approximately 1 litre per hour). If the flow increases this could indicate a fault with the seal and therefore further investigation would be required.

In addition to the Water Management System, a clean hot water flush was used to prevent salt cake build up around the seal in the stuffing box. A flow meter was installed on the hot water flush along with an alarm to warn operators when the flow gets too low.

The AESSEAL® solution was installed on the pump in May 2020 and in March 2021 the pump and seal are operating well with no signs of leakage.

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