



ENVIRONMENTAL TECHNOLOGY

Upgrade will result in major savings for US company

The US petrochemical company Westlake CAO is set to save tens of thousands of dollars a year following the installation of specially-designed seal pots to replace 40 existing pots which had been in place for around half a century.

AESSEAL® engineers immediately noticed that seals coming out of the South Synthesis area of the Vinyls unit were showing signs of severe seal face wear and that the walls of the pots were deteriorating. Further inspection confirmed that the contamination was a combination of seal pot / oil top up header degradation and solids from the process. The barrier fluid going to the seal would first have to filter through these solids before reaching the seal faces, resulting in abrasive wear and premature seal failures.

AESSEAL® recommended the installation of the AES-FV (Flanged Vessel) system which allows for effective cleaning inside the seal pot. The FV vessel is designed for use in arduous applications where the build-up of solids in the vessel is an issue. Following a presentation, Westlake decided to install specially-designed AES-12FV systems and stainless steel in-line filters on over 40 pumps. The replacement process began in July 2020 and the 40th and final pot was installed in September 2023.

The new flanged seal pots, in conjunction with the in-line filters, help to provide cool, clean fluid to the seal. Barrier fluid type was changed to a synthetic oil specifically designed for mechanical seals. Previous oil was contributing to seal failures due to its high viscosity causing blistering of the carbon seal face material...

'Estimated savings of \$47,500 each year'

Industry:	Petrochemical
Product:	AES-FV™
Application:	Monomers
MTBF Increase:	30% (and counting)
Savings:	\$47,500 each year
Reference N.O:	TD3115370



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The new specially-designed pots required a 6" vessel conformed to the KY pressure vessel code, and a bottom flange which could be easily removed to carry out internal cleaning. AESSEAL® designed a seal pot tailored for the application.

Westlake's senior engineer Jeff Fletcher said that the new pots were making a major difference in improving the efficiency and reliability of the system.

"We're very pleased with the extended seal life," Mr Fletcher said, "as well as how this has cleaned up the look of the South Synthesis area."

By the time the system has been in operation for five years, it's expected that Westlake will be saving an estimated \$47,500 a year as a direct result of the upgrade.



Before - solids inside vessels



After

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