



November 2, 2022

Cosmo Oil Co., Ltd.

Japan Oil, Gas and Metals National Corporation

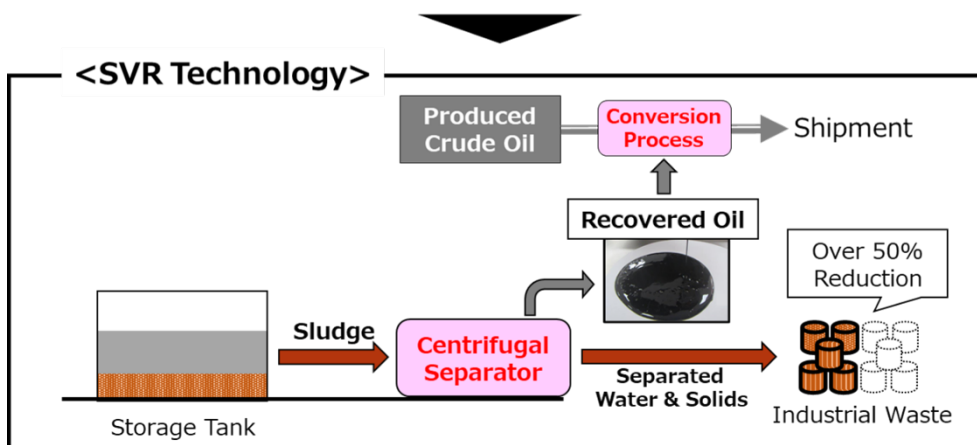
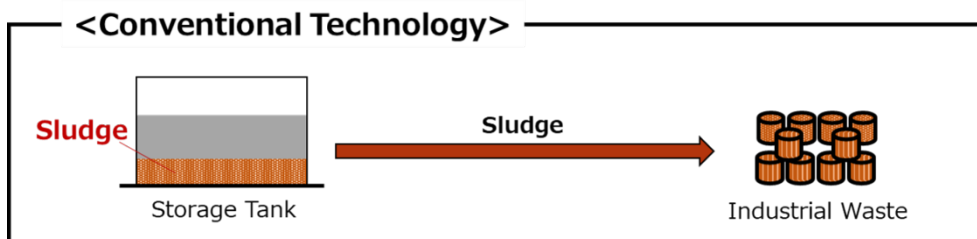
Abu Dhabi Oil Co., Ltd.

Cosmo, JOGMEC, and Abu Dhabi Oil Complete Verification Testing of
a New Sludge Volume Reduction Technology
~Enabling 50% or More Reduction in Crude Oil Sludge~

Cosmo Energy Group company Cosmo Oil Co., Ltd. together with Japan Oil, Gas and Metals National Corporation ("JOGMEC") and Abu Dhabi Oil Co., Ltd. have succeeded in developing a sludge volume reduction ("SVR") technology that recovers useful oil from sludge accumulated in crude oil storage tanks, enabling a 50% or more SVR compared to conventional technology.

Sludge is the mixture of oil, water, and solid material (sand, rust, etc.) contained in crude oil that has settled and accumulated at the bottom of crude oil storage tanks. Traditionally, sludge is discharged from tanks during overhaul inspections and disposed of as industrial waste.

Cosmo Oil, JOGMEC, and Abu Dhabi Oil have been working since 2016 to develop a technology to reduce sludge volume, with their efforts culminating in the development of an SVR technology that combines technology to separate sludge into useful oil and unnecessary water and solid material using a centrifugal separator with technology that converts the recovered oil back into crude oil by mixing it with newly produced crude oil. Cosmo Oil licensed its SVR technology to Cosmo Engineering Co. Ltd. for sludge accumulated in crude oil storage tanks owned by Abu Dhabi Oil. As a result of verification testing for all accumulated sludge, the parties succeeded in reducing sludge volume by more than 50% compared to conventional technology.



How Conventional Technology and SVR Technology Works



Sludge



Centrifugal Separators

With the successful development of this latest SVR technology, it is now possible to drastically reduce the volume of sludge, which has until now been disposed of as industrial waste. The three parties are committed to further improving the technology based on expertise gained through verification testing and promoting its commercial deployment not only in oil-producing countries but also at oil terminals in and outside Japan.

< Developing Entities >

[Japan Oil, Gas and Metals National Corporation]

Head office : Minato-ku, Tokyo

Established : February 2004

Representative : Tetsuhiro Hosono, Chairman & CEO
Website : <https://www.jogmec.go.jp/>

[Cosmo Oil., Ltd.]

Head office : Minato-ku, Tokyo
Established : April 1986
Representative : Yasuhiro Suzuki, President, Representative Director & CEO
Website : <https://coc.cosmo-oil.co.jp/index.html>

[Abu Dhabi Oil Co., Ltd.]

Head office : Minato-ku, Tokyo
Established : January 1968
Representative : Katsushi Nishi, President, Representative & CEO
Website : <https://www.cts-co.net/adoc/>

(The official language for Cosmo's filings with the Tokyo Stock Exchange and Japanese authorities, and for communications with Cosmo's shareholders, is Japanese. Cosmo has posted English versions of some of this information on this website. While these English versions have been prepared in good faith, Cosmo does not accept responsibility for the accuracy of the translations, and reference should be made to the original Japanese language materials.)

【Contact details for inquiries】

Public Relations Group, Corporate Communication Dept.
Cosmo Energy Holdings Co., Ltd.
TEL 03-3798-3101 FAX 03-3798-3841

Facility Technology Division, Technology Dept.
Japan Oil, Gas and Metals National Corporation
TEL 043-276-9279 FAX 043-276-4063
Public Relations Division, General Coordination Dept.
TEL 03-6758-8106 FAX 03-6758-8008