



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

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ISCO & THE ISCO NEWSLETTER

The ISCO Newsletter is published weekly by the International Spill Control Organisation, a not-for-profit organisation supported by members in 45 countries. ISCO has Consultative Status at IMO, Observer Status at IOPC Funds and is dedicated to raising worldwide preparedness and co-operation in response to oil and chemical spills, promoting technical development and professional competency, and to providing a focus for making the knowledge and experience of spill control professionals available to IMO, UNEP, EC and other organisation.

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International news

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EUROPE: STRENGTHENING EMSA'S POLLUTION RESPONSE SERVICES IN THE ATLANTIC



The oil tanker, Mencey, based in Las Palmas and engaged in bunkering activities in the area, joined EMSA's network of stand-by oil spill response vessels in July.

The vessel, contracted from the company Petrogas, is equipped with sweeping arms as well as an ocean boom and a high capacity skimmer for mechanical oil recovery and has a storage capacity of 7,271 m³ for recovered oil.

In addition, the vessel is equipped with seaborne dispersant application capability and could be supplied from EMSA's stockpile of dispersants in Las Palmas.

The primary area of operation of the vessel will be the Canary Islands and the Madeira Archipelago. <http://www.emsa.europa.eu/>

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So far, recovery efforts have yielded about 375 of oily water mixture and 250 bags of soiled sorbents, according to the Coast Guard. An oil spill response organization has deployed about 3,000 feet of hard containment boom to prevent further impact. [wbrz.com](#) [Read more](#)

July 28 – Another oil spill - 840 gallons of oil leak from pipe near Mississippi River's mouth

An estimated 840 gallons of oil leaked from a flow line into the marsh at Southwest Pass, the Coast Guard said Thursday (July 28).

The pipeline, owned by Texas Petroleum Management, has been secured and a containment boom put in place, the agency said.

Southwest Pass is a ship channel that juts off in a southwesterly direction from the main channel of the Mississippi River where the river empties into the Gulf of Mexico.

The cause of the discharge was under investigation. *The Times Picayune* [Read more](#)

August 2 – Yet another oil spill - US Coast Guard Press Release

The Coast Guard and other agencies are responding to a crude oil spill near Main Pass, Tuesday.

An estimated maximum potential of 4,200 gallons of crude oil discharged from a well owned by Texas Petroleum Investment Company.

OMI Environmental Solutions and Clean Gulf Associates, oil spill response organizations, have been contracted by TPIC to conduct clean up operations.

The Coast Guard, Louisiana Department of Environmental Quality, Louisiana Oil Spill Coordinators Office and Louisiana Department of Wildlife and Fisheries are also overseeing the response.

Coast Guard Air Station New Orleans and Southern Seaplane aircrews are conducting aerial assessments of the site and surrounding areas. The cause of the incident is under investigation.

<http://www.uscgnews.com/go/doc/4007/2870974/>

International news (continued)

INTERNATIONAL BIRD RESCUE CELEBRATES ITS 45th ANNIVERSARY

This year marks a milestone for International Bird Rescue – it has been 45 years since the oil spill that led directly to the creation of Bird Rescue. In January 1971, two oil tankers collided in foggy conditions near the Golden Gate Bridge. The ruptured tankers spilled at least 800,000 gallons of crude oil, affecting 7,000 birds.

Following the spill, Bird Rescue was officially hatched in April of 1971 at Berkeley's Aquatic Park. Since then, it has led oiled bird rescue efforts in over 220 oil spills in more than a dozen countries.

For 45 years, International Bird Rescue has been a global leader in responding to man-made disasters affecting wildlife, such as oil spills and marine debris. In addition to a fully-equipped emergency response center in Alaska, Bird Rescue runs two world-class wildlife centers in California which care for more than 5,000 animals each year, including pelicans, herons, shorebirds, and other aquatic species. This is made possible by over 60,000 volunteer hours kindly provided by a diverse group of retirees, nurses, veterinary students, and others. To date, their response teams have led rescue efforts in more than 200 spills across six continents. Visit www.Bird-Rescue.org to learn more.

Incident reports from around the world

USA: LOUISIANA – THREE SPILLS WITHIN 10 DAYS

July 29 - Coast Guard, other agencies continue to respond to oil spill (This is the Louisiana spill reported in last week's ISCO Newsletter)

The Coast Guard and other agencies are continuing their response to a crude oil spill near Lake Ecaille on Friday.

Incident reports from around the world (continued)

August 3 - Louisiana Parish Hit by Third Oil Spill in Ten Days As Pressure Grows To Hold Oil and Gas Industry Accountable for Coastal Damage

Yesterday, an estimated 4,200 gallons of crude oil was discharged from a well owned by the Texas Petroleum Investment Company into the mouth of the Mississippi River, according to the U.S. Coast Guard. The Coast Guard and other state agencies are now responding to the third oil spill in two weeks.

Louisiana's Plaquemines Parish coast was also hit with two oil spills last week. An estimated 4,200 gallons of crude oil attributed to oil and gas extraction company Hilcorp spilled in the marsh near Lake Grande Ecaille, part of Barataria Bay, on July 25. Three days later, 850 gallons were discharged by a Texas Petroleum Management flowline into marshland in the Southwest Pass. *Desmog* [Read more and see several photos](#)

MAURITIUS: BENITA SINKS DURING TOW TO ALANG

July 31 - Salvage company Five Oceans Salvage reports that Benita sunk approximately 93.5 nautical miles from Mauritius at a depth of 4,400 meters. The vessel turned over by the stern after developing a severe trim, prompting the tug Ionian Sea FOS to use the quick release on its towline in anticipation of the Benita's imminent sinking. *The Maritime Executive* [Read more](#)

INDIA: CLEAN-UP OF OIL SPILL FROM GROUNDED CRUISE LINER CONTINUES AT GOA

August 1 – Report received from ISCO Member, Sea Care Marine Services of Mumbai, India – “We would like to inform you that Sea Care Marine is presently involved in providing oil spill response services to grounded ship MV Qing at Goa India. The approx 205 meter long cruiser ship MV Qing grounded near Marmugaon Port Trust at Goa.

We were contacted by owner of the ship for OSR services support. We mobilised our OSR equipment, our IMO level I & II trained team and the vessel Garland. With the help of approx. 750 meter of oil boom we have recovered 12500 litres of oil from water using our oil skimmer. We are continuing oil skimming as required.

Resolve Marine Pvt. Ltd. has been contracted by the British Marine Club for stability maintenance, salvage and oil recovery. According to vessel owner, she is carrying 350,000 litres of heavy fuel oil.

Since 4th July we have been carrying out these operations”. <http://www.seacaremarine.com/>

[Note from Editor – An earlier report on this incident appeared in the ISCO Newsletter, issue 542 of 11 June 2016]

KENYA: NEMA STOPS OIL SPILL CLEAN UP IN KIBWEZI

August 2 - The environmental agency has stopped the ongoing oil spill clean up in Kibwezi, putting on the spotlight the Kenya Pipeline Company (KPC) and the firm contracted for the job.

National Environment Management Authority (NEMA) Director General Geoffrey Wahungu has accused KPC of contracting an unlicensed company.

"You are therefore required to stop further clean up at the site immediately until you comply with the law," the order addressed to KPC Managing Director Joe Sang reads.

Mr Sang on July 15 reported that 18,000 litres of oil from the spill scene had been recovered and "re-injected back into the pipeline." *All Africa* [Read more](#)

CANADA: CLEANUP CONTINUES ON NORTH SASKATCHEWAN RIVER OIL SPILL

August 2 - Dropping water levels along the North Saskatchewan River has been causing additional issues for cleanup crews, as boats are having issues navigating down river.

Heavy rain events in Alberta had swelled the river at the time of the spill, but river levels are now dropping to typical seasonal levels.

At least 945 water samples have been taken since the initial spill, and 600 of those samples have been analyzed and are being used to assist in decision making as the clean up process continues on. Information from the samples is expected to be released in the coming days. *Meridian Booster* [Read more](#)

UK: NORTHERN IRELAND - MAJOR FISH KILL IN POLLUTED SALMON RIVER IN CLAUDY

August 2 - More than 1,000 fish of different species have been killed by pollution in a County Londonderry river.

The Northern Ireland Environment Agency was alerted to the incident in Claudy on Monday.

Incident reports from around the world (continued)

Its investigation continued on Tuesday when dead fish were found.

The Department of Agriculture and the Environment has said the fish kill stretches over several kilometres of river.

The cause of the pollution is still being investigated and it is believed it was in a tributary of the River Faughan, an important salmon river. *BBC News* [Read more](#)

News reports from around the world (countries listed in alphabetical order)

GUATEMALA ACCEDES TO CONVENTION COVERING CIVIL LIABILITY FOR OIL POLLUTION DAMAGE



August 2 - Guatemala has become the 136th State to accede to the International Convention on Civil Liability for Oil Pollution Damage ([CLC 1992 Protocol](#)).

The Convention ensures that adequate compensation is available to people who suffer oil pollution damage from maritime casualties involving oil-carrying ships, and places liability on the owner of the ship from which the polluting oil escaped or was discharged.

H.E. Mr. Acisclo Valladares Molina, Ambassador of Guatemala to the United Kingdom, met IMO Secretary-General Kitack Lim at IMO Headquarters, London (2 August) to deposit the instrument of accession. <http://www.imo.org/en/Pages/Default.aspx>

INDONESIA: PTTEP FACES CLASS ACTION OVER MONTARA SPILL

August 3 - Indonesian seaweed farmers on Wednesday sued Thailand's PTT Exploration and Production for potentially more than A\$200 million (\$152 million) to cover damages from Australia's worst oil spill in 2009.

A total of about 30,000 barrels of oil were estimated to have spewed into the Timor Sea after a blowout from the Montara wellhead platform on August 21, 2009. It continued leaking until November 3 (74 days), when the leak was capped.

Lawyers behind the case say it reached far as Nusa Tenggara Timur in Indonesia, more than 200 kilometers (124 miles) away. *The Maritime Executive* [Read more](#)

USA: MICHIGAN - SCHUETTE: ENBRIDGE VIOLATING STRAITS OF MACKINAC PIPELINE AGREEMENT

August 4 - Canadian oil transport giant Enbridge does not have a sufficient number of ground supports on the underwater section of its twin oil and natural gas liquids pipelines under the Straits of Mackinac — despite earlier representations to the contrary, according to state Attorney General Bill Schuette.

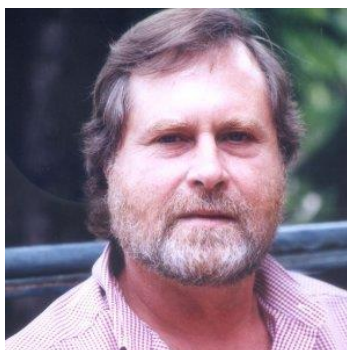
The lack of proper supports on the controversial, 63-year-old Line 5 violates the 1953 easement between the company and the state that allowed for the pipeline's construction, Schuette said in a letter Wednesday to Enbridge's Vice President of U.S. Operations Brad Shamlia. Schuette's letter also was signed by Michigan Department of Environmental Quality Director Heidi Grether and Department of Natural Resources Director Keith Creagh.

The revelation comes as state officials consider whether Line 5 should be shut down or diverted out of the Straits, because of the potential catastrophe to the Great Lakes, and the economy and communities supported by them, should the pipelines leak or rupture.

"It is undisputed that the State of Michigan required that the pipelines be supported at least (every) 75 feet," the state officials wrote in their letter to Shamlia. "That support spacing requirement was and remains a legally binding condition of the Easement."

Enbridge officials acknowledged in the summer of 2014 that some portions of the underwater line had supports that were more than 75 feet apart. In a Nov. 19, 2014, letter to state officials, "Enbridge represented that as a result of work completed in September 2014, there no longer are any unsupported spans greater than 75 feet," the Michigan officials' letter states. But within the past few days, Enbridge submitted an application to the DEQ for a permit to install up to 19 additional pipe support anchors in the Straits between Aug. 15 and Sept. 15. *Detroit Free Press* [Read more](#) [Thanks to Marc K. Shaye, Hon.FISCO]

A RETIREMENT AND A NEW MEMBER OF ISCO COUNCIL FOR SOUTH AFRICA



Following on his recent retirement Anton Moldan has stepped down as Member of ISCO Council for South Africa. A confirmation Anton has served on the ISCO Council since 2006 during which time he held the position of Environmental Adviser to the South African Petroleum Industry Association (SAPIA). In this capacity he was involved in the co-ordination of the oil industry's environmental management practices which included responsibility for the industry's combined oil spill preparedness and response activities. He was also involved in the compilation of national oil spill contingency plans in other African countries as well as the promotion of regional agreements.

The ISCO Committee thanks Anton for his contribution to the organization and wishes him well in his future life.



On behalf of the ISCO Committee and Members the Secretary has welcomed a confirmation from Fatima B Shaik, SAPIA's Head of Health, Safety, Security and Environment, that she is willing to act as the new Member of ISCO Council representing South Africa.

Fatima has been involved in environment matters since 1996. She holds a Masters in Business leadership, Masters in Science: Environmental Management (cum laude), B-Tech: Environmental Health, and N.Dip: in Environmental Health. Prior to joining SAPIA she was Country HSSE manager for Shell South Africa where she worked with various Industry members, SAPIA committees and other business fora.

Fatima currently plays a key role in working with a range of internal and external stakeholders (Government, Business, International, etc.) in promoting HSSE within the sector; co-creating the countries HSSE legislative frameworks; co-ordinating industry initiatives, including oil spill response preparedness and was recently appointed to the Advisory Council of Occupational Health and Safety.

People in the news

CHANGES ANNOUNCED IN THE MANAGEMENT TEAM AT REMPEC

August 2 - Mr. Clément Chazot, Junior Programme Officer Voluntary International Scientific (VIS) of the French Government – Seconded by the French Oil Company Total S.A. to REMPEC has concluded his support to the Centre on 15 July 2016. His secondment through the VIS programme had ended in May 2016, however thanks to the direct contribution of Total S.A, the Centre benefited from his support till 15 July 2016.

REMPEC greatly appreciated his involvement and contribution to the work of the Centre in the field of preparedness for and response to marine pollution from ships. Clément has, in particular, greatly contributed to the implementation of externally funded projects and most notably from European funding, namely the Project entitled Mediterranean decision support System for Marine Safety ([MEDESS-4MS](#)), terminated in March 2015, as well as the project for Preparedness for Oil-polluted Shoreline cleanup and Oiled Wildlife interventions ([POSOW II](#)). In this regard, Clément assisted in the supervision of the administrative and financial aspects of the projects, which included the monitoring of audits, the review of publications and various documents as well as the organization of and participation to training sessions and other meetings.

August 3 - REMPEC is pleased to announce the arrival of Mr Guillaume Poirier, who took the position of Junior Programme Administrator at REMPEC on 02 August 2016.

Mr. Guillaume Poirier held a MSc Maritime Engineering Science in Centrale-Marseille after graduating at Icam-Toulouse, generalist engineering school. After his master's degree, Mr. Guillaume Poirier worked for horizon 2020 program (EnergyMare project), he contributed in the marine renewable energy resources assessment for Atlantic area. He is seconded to REMPEC since August 2016 by the French oil company TOTAL S.A. as International Scientific Volunteer (VIS), for 18 months. <http://www.rempec.org/>

DEEPWATER HORIZON INCIDENT: WHAT HAPPENED TO THE OIL?

An article in five parts by Alun Lewis, Independent Consultant



Alun Lewis worked at the BP Research Centre in the U.K. from 1967 to 1992 and specialized in oil spill response studies from 1979. He was responsible for the formulation and testing of oil spill dispersants, particularly for use in the Arctic, and developed the Enersperse range of dispersants. Alun was a member of the IP Dispersants Working Group, which prepared the UK Guidelines on the Use of Dispersants in 1986. He also took part in the dispersant sea-trials in the Beaufort Sea in 1986 and in several large scale sea-trials to test dispersants in UK and Norwegian sectors of the North Sea. Leaving BP Research at the end of 1992, he worked for several months as a consultant to Warren Spring laboratory to prepare a report on the sea trials involving sequential aerial application of demulsifiers and dispersants. Alun went to work for SINTEF in Trondheim, Norway in 1993. Once again, the topic of his studies as a Senior Scientist was oil spill response, specializing in the fate and behavior of spilled oil and the use of oil spill dispersants. He participated in many research programs on the

“weathering” of spilled oils at sea. These included the development of laboratory procedures to simulate the various oil “weathering” processes that occur at sea. He participated in several large-scale sea-trials from 1994 until 1996 to validate these laboratory techniques and to explore the operational aspects of dispersant spraying from ships and helicopters. He was also keynote speaker and presenter of the dispersant ‘white paper’ at International Oil Spill Conference in 1997.

Returning to the UK in the middle of 1997, Alun worked with AEA Technology plc at Culham, Oxfordshire as a Principal Consultant. Alun was the project manager for the AEA’97 sea trial project, which was a large sea trial involving dispersant use on Alaska North Slope and Forties crude oils and IFO-180 fuel oil. Alun became an independent consultant in 1998. His specialties are oil spill dispersants, the behavior of spilled oil at sea and the aerial surveillance of oil at sea. He has worked with many clients, commercial and governmental, both in the UK and around the world. He has conducted numerous studies for the UK Maritime and Coastguard Agency. He also organized the 2003 UK dispersant sea-trial in the English Channel. He has participated in many national exercises and training courses. Alun has conducted many National and Regional Dispersant Workshops throughout the world.

PART ONE

It has been six years since the Deepwater Horizon incident and an enormous amount has been written about the various aspects of the oil release and the response. BP funded the Gulf of Mexico Research Initiative (GoMRI) with \$500 million over a 10-year period and a very large number of research studies have been conducted. Since 2011, GoMRI has provided \$350 million for studies and over 650 papers have been published by GoMRI-funded researchers, including over 100 papers produced in 2016. This effort has not yet answered the obvious questions about what actually happened to the oil that was released into the Gulf of Mexico (GoM), such as:

- i. How much oil was released into the GoM?
- ii. What happened to the released oil?
- iii. How effective were the different oil spill response techniques used?

This paper has been put together to try and assess the current state of knowledge in a way that is easy to comprehend and to highlight what uncertainties remain.

1. How much oil was released from the well and how much entered the GoM?

Oil and gas started to be released into the sea at 5,000 feet (1,500 m) water depth after the riser buckled and broke when the Deepwater Horizon sank on April 22nd, 2010. Various measures were used to try and stop the flow or capture the escaping oil before the oil was stopped from flowing on July 15th. The gas and oil flows varied over the 87 days of the release. The amount of oil and gas being released from the subsea wellhead could not be directly measured.

The US Government formed the Flow Rate Technical Group (FRTG) on May 19th 2010 to provide estimates of the flow rates. This team announced on August 2nd that it estimated that a total of 4.9 million barrels of oil has been released from the well. Various academic researchers have also produced their own estimates of how much oil had been released from the well or had entered the Gulf of Mexico, based on various measurements and assumptions.

The amount of oil released was instrumental in determining the fines under the Clean Water Act and was the subject of a prolonged legal case. BP’s experts estimated that 2.45 million barrels of oil had been released from the well while the US Department of Justice’s experts estimated that 4.19 million barrels of oil had been released. On 15th January

2015, after listening to extensive evidence presented by both sides, Judge Carl Barbier of the US District Court for the Eastern District of Louisiana determined that 4.0 million barrels of oil had been released from the well.

Not all of the oil released from the well entered the waters of the GoM. From June 3rd until the oil flow was stopped, some oil was being collected from the wellhead and pumped to the Discoverer Enterprise. Some oil was also collected and sent to the Q4000 vessel and burnt by flaring. During the legal case, it was eventually agreed by all parties that 810,000 barrels of oil that was released from the well had been recovered directly from the wellhead before it had entered the water. The legally agreed amount of oil that was released from the subsea well into the waters of the GoM was therefore 4 million minus 810,000 barrels, which equals 3.19 million barrels of oil.

3.19 million barrels is equivalent to 134 million US gallons or 507,000 m³ of crude oil. The precise amount of crude oil that was released will most probably never be known, but this value is the legally agreed amount based on a consideration of the evidence available. Some papers use the older estimates or their own estimates and this can create confusion.

2. What happened to the oil that was released?

The Deepwater Horizon incident involved a subsea blowout of oil and gas from a HPHT (High Pressure High Temperature) oil well at a water depth of 5,000 feet. Some aspects of the behaviour of the released oil can be understood from past oil spills, but others are particular to a subsea oil well blowout.

a. Knowledge of the behaviour of oil spilled onto the sea surface

The general behaviour of oil spilled onto the sea's surface from, for example, a damaged oil tanker, has been extensively studied and is well understood. Spilled oil is said to 'weather' and the oil properties and volume change with time at sea. The basic processes are:

- i. Spreading: Spilled oil spreads out over the sea surface to form an oil slicks of very uneven thickness, ranging from sheen that is around 1 micron (4×10^{-5} inch) thick up to patches of oil that can be several millimetres (circa 0.1 inch) thick.
- ii. Natural dispersion: Some of the oil in the thinner areas of the slick will be subjected to wave action that converts the oil into oil droplets of various sizes in the upper water column. Most of this oil will float back up to the sea surface, but a small proportion will be retained as dispersed oil in the upper water column. Most of this dispersed oil will be biodegraded within a few days by naturally occurring microorganisms in the sea.
- iii. Evaporation: The more volatile components from the oil, typically the BTEX compounds (Benzene, Toluene, Ethylbenzene and Xylenes) and short chain hydrocarbons, evaporate into the air leaving an oil residue that is of less volume, but of higher viscosity, on the sea surface.
- iv. Water-in-oil (w/o) emulsification: The oil residue that remains on the sea surface may be capable of forming stable water-in-oil emulsions that consist of water droplets within the body of the oil stabilised by the presence of precipitated asphaltenes from the oil. Most crudes oils and residual fuels oils do this, but distillate fuels (gasoline and kerosene) do not. This a physical process requiring wave action and the water content of the emulsified oil will raise slowly to around 75%, thereby increasing the volume of pollutant on the sea surface to four times that of the oil from which it is formed. The viscosity of emulsified oils is much higher than that of the oil residue from which they are formed and the oil becomes persistent on the sea surface as any natural dispersion is suppressed.
- v. Drifting of oil on the sea surface: The emulsified oil residue drifts on the sea surface under the combined influence of approximately 3% of wind speed and 100% of the prevailing surface currents.

The speed at which these processes occur and the extent to which the physical properties of the oil are altered depend on (a) the properties of the crude oil, and (b) the prevailing conditions, principally temperature and sea state. Several different computer models are available that can forecast the effects of oil 'weathering' and drift trajectory. A typical example would be:

- 10,000 barrels of a light crude oil spilled onto the sea surface would rapidly spread out to form a very large oil slick. About 30% volume, consisting primarily of the BTEX compounds, would evaporate in the first 24 hours on the sea surface. This would leave around 7,000 barrels on the sea surface.
- In moderate sea conditions about 5% of the volume of oil would be naturally dispersed into the sea by wave action, leaving 6,500 barrels of oil on the sea surface.
- Water-in-oil emulsification over the next few days could cause the water content of the emulsion formed to rise up to 75% volume. The volume of emulsified oil would increase to around 25,000 barrels. This emulsified oil would be persistent and some could drift ashore.

b. Knowledge about the behaviour of oil released subsea

Subsea blowouts had not been studied to a great extent before the Deepwater Horizon incident. However, some work had been done, notably the DeepSpill experiments which were conducted in Norwegian waters in 2000 with oil and

gas released at a depth of 844 metres (2,770 feet) and these gave insight to the behaviour of the oil released at the Deepwater Horizon incident. The basic processes are:

- The subsea release of oil and natural gas (methane) break up the oil into droplets of various sizes in the water because of the intense turbulence of the release. The gas will be in the form of gas bubbles in the water column.
- The gas bubbles will produce a buoyant plume of water that rises quite rapidly through the water carrying the 'plume' or 'cloud' of oil droplets within it.
- In water deeper than about 500 metres, the natural gas will dissolve into the water due to its solubility at high pressure. The dissolution of the gas will reduce the buoyancy of the rising plume and the ascent will slow.
- The larger oil droplets will then continue their ascent towards the sea surface due to their inherent buoyancy, while smaller oil droplets will remain dispersed in the water at depth.

The properties of the crude oil are less important in determining the initial fate of the oil than with a sea surface oil spill, but the release conditions, principally the Gas Oil Ratio (GOR), is a very important factor controlling the oil droplet size distribution that is produced at the release. The droplet size distribution determines how much of the released oil is mechanically dispersed and stays in the water column and how much oil eventually reaches the sea surface.

There are several obvious differences between the behaviour of a crude oil released onto the sea surface and oil released subsea:

- Mechanical dispersion:** The natural dispersion of oil caused by wave action at the sea surface is replaced by the much more energetic turbulence caused by the high-velocity release of oil and gas into the sea. This mechanical dispersion can cause a significant proportion of the oil released to never reach the sea surface. Instead, the oil would be dispersed into the water column at depth where the majority of the oil would be biodegraded over the next days and weeks.
- Evaporation replaced by dissolution:** As the crude oil is underwater and not in contact with the air there will be no evaporation of the more volatile components from the oil directly into the air. However, being present as a plume or cloud of small oil droplets in the water there is a high oil/water contact area that enables partially water soluble oil compounds to rapidly dissolve into the sea. The most volatile compounds in the oil, the BTEX compounds, are also the most water soluble. The BTEX compounds, plus some other compounds, dissolve into the sea.
- Water-in-oil emulsification suppressed:** The dispersion of the oil into oil droplets with a wide range of sizes is not suitable for the slow incorporation of water droplets to form water-in-oil emulsions while the oil is in the water column. However, oil that reaches the sea surface would then start to behave as if it had been released there. There will be some further loss of volume by evaporation of the volatile components that remain in the oil into the air (although a high proportion will have already been lost by dissolution into the water column). This leads to changes in oil composition that allows stable oil-in-water emulsions to be formed.

There is insufficient information available to provide an example of the fate of oil release from a 'typical' subsea oil and gas blowout.

The next part of this article will be in the next ISCO newsletter

Publications

SPILLS OF DILUTED BITUMEN FROM PIPELINES: A COMPARATIVE STUDY OF ENVIRONMENTAL FATE, EFFECTS, AND RESPONSE

National Academies of Sciences, Engineering, and Medicine.

National Academies Press, Washington, DC. ISBN: 978-0-309-38010-2, 167 pp, 2016

Beginning immediately after a spill, exposure to the environment begins to change spilled diluted bitumen through various weathering processes. The net effect is a reversion toward properties of the initial bitumen. An important factor is the amount of time necessary for the oil to weather into an adhesive, dense, viscous material. For any crude oil spill, lighter volatile compounds begin to evaporate promptly; in the case of diluted bitumen, a dense viscous material with a strong tendency to adhere to surfaces begins to form as a residue. For this reason, spills of diluted bitumen pose particular challenges when they reach water bodies. In some cases, the residues can submerge or sink to the bottom

Publications (continued)

of the water body, and the density of the residual oil does not necessarily need to reach or exceed the density of the surrounding water for this to occur. The crude oil may combine with particles present in the water column to submerge and then remain in suspension or sink. These factors are important to consider for spill response planning and implementation. Free download of this report is available at <http://www.nap.edu/catalog/21834/spills-of-diluted-bitumen-from-pipelines-a-comparative-study-of>. *EPA Technology Innovation News Survey* [Read more](#)

Links for recent issues of other publications (in alphabetical order)

AMSA Aboard	News from the Australian Maritime Safety Authority	June 2016
AMSA On Scene	Australia: National Plan for Marine Environmental Emergencies	March 2016
ASME EED EHS Newsletter	News and commentary on HSE issues from George Holliday	Most recent issue
Bow Wave	Sam Ignarski's Ezine on Marine & Transport Matters	Current issue
Cedre Newsletter	News from Cedre in Brittany, France	June 2016
Celtic and Biogenie enGlobe Newsletter	Technical Information on Polluted Site Remediation	Spring 2016
CROIERG Enews	Canberra & Regions Oil Industry Emergency Response Group	Current issue
EMSA Newsletter	News from the European Maritime Safety Agency	August 2016 issue
Environmental Technology Online	Environmental Monitoring, Testing & Analysis	July 2016 issue
IMO News Magazine	News from the International Maritime Organization	No 2, 2016
IMO Publishing News	New and forthcoming IMO publications	July 2016
Intertanko Weekly News	International news for the oil tanker community	July 22, 2016
IPIECA eNews	Int'l Petroleum Industry Environmental Conservation Assoc'n	February 12 issue
JOIFF "The Catalyst"	Int'l Organisation for Industrial Hazard Management	July 2016 issue
MOIG Newsletter	News from the Mediterranean Oil Industry Group	Quarter 1, 2016 issue
NOWPAP Quarterly	News from the North West Pacific Action Plan	Quarter 1, 2016 issue
OCIMF Newsletter	News from the Oil Companies International Marine Forum	July 2016 issue
Pollution Online Newsletter	News for prevention & control professionals	August 3, 2016 issue
Sea Alarm Foundation Newsletter	Oiled wildlife Preparedness and Response news from Sea Alarm	Autumn 2015 issue
Technology Innovation News Survey	News from US EPA – Contaminated site decontamination	June 16 - 30, 2016
The Essential Hazmat News	Alliance of Hazardous Materials Professionals	Feb 29, 2016 issue
Transport Canada Newsletter	News and articles re transport of dangerous goods in Canada	Winter 2014 issue
USA EPA Tech Direct	Remediation of contaminated soil and groundwater	August 1, 2016
USA EPA Tech News & Trends	Contaminated site clean-up information	Spring 2016 issue
WMU Newsletter	News from the World Maritime University	July 2016 issue

Your editor depends on regular receipt of updated links for listed publications. If these are not received, relevant entries may be discontinued.

New products and services

NORWAY: REPORT FROM THE NORWEGIAN COASTAL ADMINISTRATION – SUCCESSFUL SKIMMER TESTS



July 28 - The latest tests of its oil skimmer in Norway have brought FORU-Solution of the Netherlands a step closer to making deliveries to the USA.

That is the conclusion drawn by Koos Tamminga and Bert Sibinga, technical vice president and CEO respectively of the innovative Dutch company.

When they leased time at the national centre for testing of oil spill response equipment in June, it represented their third visit to this Norwegian Coastal Administration (NCA) facility. They were also accompanied this time by an observer and potential customer from Russia.

[See more pictures from the test in our Flickr-album.](#)

Personnel from FORU-Solution worked for more than a week at the test centre. As on previous visits, challenges related to their oil skimmer were identified and corrected. However, the main aim was to conduct specific tests requested by an interested US party ahead of further purchase negotiations.

“When we ran into some challenges, we found that Bjørn Ronny Frost, the NCA’s senior engineer at the centre, had solutions and alternative proposals for us,” says Tamminga. “This allowed us to get through these demanding tests.”

He reports that good results had also been obtained from the company’s visit to the centre in Horten south of Oslo during November 2015, which led in turn to the sale of the first skimmer prototype to Colombia after modifications.

New products and services (continued)

[Read more about FORU-Solution's earlier visit to the NCA centre here.](#)

Tests in waves and currents - "Our equipment could have been useful in some of the major incidents we've seen worldwide," says Tamminga.

That is because the skimmer can operate in both waves and currents. This ability was checked at the centre during the current tests. [See the video here.](#) "We've given our equipment a very *robust* design," explains Sibinga. "That means it also works when you've launched it on the sea in rough weather."

Bigger ships need tougher equipment - The two executives add that the increasing size of ships and their cargoes also call for bigger and more robust oil spill recovery systems to be available.

Both make it clear that they would have liked to conduct tests with their recovery equipment during the verification trials conducted annually under the "Oil in Water" programme by the Norwegian Clean Seas Association for Operating Companies (Nofo) and the NCA.

[Read here about this year's test activities, where new methods are tested on oil spills in the Norwegian North Sea.](#)

Helping to improve solutions - "I can see that FORU-Solution has benefitted from testing its oil spill equipment with us," says Steinar Lodve Gyltnes, head of the logistics and technology section at the NCA's emergency preparedness centre. "In that way, we're contributing in line with our vision to developing new and improved oil spill response equipment on a worldwide basis." *He emphasises that all comments about the test of the skimmer and its capabilities come from FORU-Solutions itself as the developer.*

The fact that both Norwegian and international players lease time at the national test centre gives the NCA useful information about what solutions are under development on the world market. *Kystverket* [Read more](#)

AERONAUTICS COMPANY UNVEILS NEW SYSTEM TO FIGHT OIL SPILLS WITH BOEING'S 737-400

July 26 - An Everett aeronautical company has unveiled a new way to use Boeing's 737-400 cargo freighter. It's designed a system to use it to tackle oil spills from the air.

This first-of-its-kind system can be loaded piece-by-piece into the plane, then used to spray oil spill dispersant, to clean up large spills on bodies of water. What makes it unique, is the whole thing can be removed to use the plane for other purposes. Waypoint Aeronautical Corporation introduced the technology, called the Oil Spray Dispersant System, ODSS, at its headquarters in Everett today. Waypoint worked with a UK-based company, the RVL Group, in developing the technology.

The Federal Aviation Administration has just approved the system. It's expected to be fully certified by the end of the year.

Currently, older planes that don't have the holding capacity or speed of the 737-400 are used to spread dispersant onto water in the area of spills.

The companies reached a big milestone, when it received a Supplemental Type Certificate from the FAA, an important step toward making the dispersant system available to commercial operators, governments and government contractors in America and Europe. <http://q13fox.com/2016/07/26/aeronautics-company-unveils-new-system-to-fight-oil-spills-with-boeings-737-400/>

OSRL: OFFICIAL LAUNCH OF NEW AERIAL DISPERSANT CAPABILITY



August 1 - Fitted with internal tanks, pumps and a spray boom to deliver dispersant liquid, the specially adapted Boeing 727-2S2F (RE) aircraft are truly a first-of-a-kind capability for the oil and gas industry.

OSRL has successfully concluded its work with British aero engineering firm T2 Aviation, to modify and deliver two former FedEx Boeing 727-2S2F (RE) aircraft. [Read more and watch video](#)

Events

INTERSPILL 2018 DATES

Interspill 2018, the European oil spill conference and exhibition, will be held at Excel, in London over 13-15 March 2018. Again co located with Oceanology International, as in 2012.

Rob Cox, the Chairman of the Interspill Steering Committee, said that “we have decided to continue a successful formula, and will hold Interspill 2018 in London again, working with Reed Exhibitions. The Committee made the decision at a recent meeting in Lisbon, hosted by EMSA, who have been supporting the event since 2007.”

The continuing success of Interspill, with over 1,250 delegates, visitors and exhibitors from 75 countries attending Interspill 2015 at RAI Amsterdam in March this year made it the most successful event in the Interspill series to date

UPCOMING EVENTS SUMMARY

COUNTRY	2016	TITLE OF EVENT	LOCATION
For more information click on Title of Event			
INDIA	August 11-12	Oil Spill India	Mumbai
SINGAPORE	August 30-31	International Safety at Sea Conference	Singapore
UK	September 7-8	7th Maritime Salvage & Casualty Response	London
INDIA	Sept. 12-14	International Rivers Symposium	New Delhi
SINGAPORE	Sept 12-14	Salvage and Wreck Asia	Singapore
NORWAY	Sept 12-16	International NOSCA Oil Spill Technology Seminar	Bodo
SINGAPORE	Sept. 13-15	Salvage & Wreck Asia Conference	Singapore
INDIA	Sept. 22-24	India Clean Seas Conference 2016	Goa
NAMIBIA	Sept. 26-29	GIWACAF Workshop on IMS and NEBA	Walvis Bay
FRANCE	October 10-14	Sea Tech Event 2016	Brest
KOREA	October 11-13	World Ocean Forum 2016	Busan
UK	October 12-13	The Contamination Expo Series 2016	London
FRANCE	October 13	Info Day - Remote detection and maritime pollution	Brest
UAE	October 17-19	EI Middle East HSE Technical Forum	Abu Dhabi
UK	October 18	UK Spill – Spill Science Seminar	Southampton
NIGERIA	October 26-26	GIWACAF Workshop on Oil Spill Modelling	Abuja
USA	November 1-3	Clean Gulf 2016	Tampa FL
USA	November 1-4	Emergency Preparedness, Hazmat Response Conf.	Pittsburgh
MALTA	November 2-3	JOIFF Fire & Explosion Hazard Mgmt. Conference	St. Julians
UAE	November 7-10	Abu Dhabi Int'l Petroleum Exhibition & Conference	Abu Dhabi
COTE D'IVOIRE	Nov. 21-24	GIWACF W'shop on Cont'y Planning & Compensat'n	Abidjan
SENEGAL	December 5-7	GIWACAF Workshop on Dispersants and NEBA	Dakar
2017			
USA	March 28-30	2017 SCAA Annual Meeting & Conference	Washington DC
USA	May 15-18	International Oil Spill Conference	Long Beach CA
2018			
UK	March 13-15	2018 INTERSPILL Conference and Exhibition	London
To request posting of an event of interest to the Spill Response Community please send details to the Editor			

Job vacancies

UK: NEW VACANCY AT ITOPF

ITOPF is looking for an Information Data Analyst to join its team. Closing date: 24th August 2016. [More info](#)

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