



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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The Register of ISCO Members is maintained by **Ms Mary Ann Dagleish** (Membership Director) and the list of members is on the website at <http://www.spillcontrol.org>

The Executive Committee is assisted by the non-executive ISCO Council composed of the following national representatives – **Mr John Wardrop** (Australia), **Mr Namig Gandilov** (Azerbaijan), **Mr John Cantlie** (Brazil), **Dr Merv Fingas** (Canada), **Captain Davy T. S. Lau** (China, Hong Kong), **Mr Li Guobin** (China, Mainland), **Mr Darko Domovic** (Croatia), **Eng. Ashraf Sabet** (Egypt), **Mr Torbjorn Hedrenius** (Estonia), **Mr Pauli Einarsson** (Faroe Islands), **Prof. Harilaous Psaraftis** (Greece), **Captain D. C. Sekhar** (India), **Mr Dan Arbel** (Israel), **Mr Sanjay Gandhi** (Kenya), **Mr Joe Braun** (Luxembourg), **Chief Kola Agboke** (Nigeria), **Mr Jan Allers** (Norway), **Capt. Chris Richards** (Singapore), **Mr Anton Moldan** (South Africa), **Dr Ali Saeed Al Ameri** (UAE), **Mr Kevin Miller** (UK) and **Dr Manik Sardessai** (USA).

For more info on Executive Committee and Council Members go to www.spillcontrol.org

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International news

25TH ANNIVERSARY OF THE PACIFIC STATES/BRITISH COLUMBIA OIL SPILL TASK FORCE



The task force has issued its 25th Anniversary Report which provides a snapshot of significant projects from the past two decades of its activities and its forward work program.

This year marks the 25th anniversary of the Pacific States/British Columbia Oil Spill Task Force. The organization was launched in 1988 by the Governor of Washington and Prime Minister of British Columbia shortly after the oil barge Nestucca collided with its tug along the Washington coast. Less than a year later, the Exxon Valdez spill in Prince William Sound in 1989 led to Alaska, California, Oregon and California joining the Task Force. In 2001, Hawaii became a member, creating a broad coalition of western Pacific states and provinces united in their efforts to prevent and respond to oil spills across the West Coast.

During 2014 the Task Force completed a thorough review and update of its five-year strategic plan to ensure the plan addresses on-going as well as emerging risks of oil spills from vessels, pipelines and rail. In addition, it added restoration of the environment, preservation of communities, and supporting the economy as core objectives of the organization. Its new 2014-2019 Strategic Plan was adopted in June 2014

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International news (continued)

The emergence of new oil products has presented challenges in preparedness and response planning due to the varied chemical characteristics of the oils, the types of diluents and other chemical additives added to heavy oils for transporting, and the nature of their behaviour when spilled on water and ice. [Download the Task Force 2014 Report](#) [Thanks to SAC News and Dr Merv Fingas, Member of ISCO Council for Canada]

IPIECA: PUBLIC CONSULTATION: OIL AND GAS INDUSTRY GUIDANCE ON SUSTAINABILITY REPORTING

IPIECA, API and IOGP welcome comments on the 2015 update to the second edition of the Oil and gas industry guidance on voluntary sustainability reporting.

The revisions are not intended to effect wholesale changes to the 2010 Guidance, but reflect the evolution of some issues since its publication. The ultimate aim is to ensure the Guidance remains relevant and useful for oil and gas companies and their stakeholders. The Guidance includes information that is relevant to spill prevention, reporting and countermeasures.

The updates have been developed through a cross-industry working group of issue experts together with reflections from a panel of independent experts with expertise in sustainability reporting practices relating to the industry.

IPIECA welcomes comments until 19 December 2014. If you have any questions please contact our [Reporting Manager](#). [More info](#) [2010 Guidance](#)

SPE: OFFSHORE EUROPE 2015 - CALL FOR PAPERS

There are just 8 weeks left to submit your technical paper proposals to be presented at the SPE Offshore Europe Conference and Exhibition 2015. The deadline for submission of papers is 12 January 2015.

[Read welcome letter](#) If you have any questions regarding the 2015 Call for Papers, please contact +44 (0)20 7299 3300 or londonprog@spe.org

EFFECTS OF DILUTED BITUMEN ON THE ENVIRONMENT: A COMPARATIVE STUDY

The National Academy of Sciences has announced the Committee Members who will be participating in the study being undertaken into the effects of diluted bitumen on the environment –

Diane M. McKnight (Chair) University of Colorado Boulder

Michel Boufadel, New Jersey Institute of Technology

Merv Fingas, Independent Consultant

Stephen K. Hamilton, Michigan State University

Orville Harris, O.B. Harris, LLC

John M. Hayes, Woods Hole Oceanographic Institution (Retired)

Jacqueline Michel, Research Planning, Inc.

Carys Mitchelmore, University of Maryland Center for Environmental Science

Denise Reed, The Water Institute of the Gulf

Robert M. Sussman, Sussman and Associates

David L. Valentine, University of California, Santa Barbara

Staff

Douglas Friedman, Study Director

Camly Tran, Postdoctoral Fellow

Elizabeth Finkelman, Program Coordinator

Cotilya Brown, Senior Program Assistant

Incident reports from around the world

NIGERIA: FRESH OIL SPILL IN BAYELSA COMMUNITY

November 15 - A fresh oil spill from Shell's Okordia/Rumueme trunk line has devastated Ikarama community in Yenagoa Local Government Area of Bayelsa State. Community sources said the spill occurred on Wednesday and has been spreading fast into the surrounding swamps. [Scan News](#) [Read more](#)

Incident reports from around the world

USA: NYK SHIP SUFFERS CARGO OFFLOAD MISHAP

November 17 - The U.S. Coast Guard and local fire department personnel enforced a safety zone for containers that fell in the water from the motor vessel NYK Aquarius while offloading cargo at SSA Facility Berth 57 in the Oakland estuary late Saturday. *The Maritime Executive* [Read more](#)

USA: CAUSE OF DEATH FOR DUPONT WORKERS KILLED IN CHEMICAL LEAK RELEASED

November 19 - According to a preliminary coroner's report, the four workers killed in a chemical leak at the DuPont plant near La Porte died from accidental asphyxiation. The industrial accident happened Saturday, killing brothers Gilbert Tisnado and Bobby Tisnado, Crystle Wise and Wade Baker. The full report has not yet been released. *Click2Houston.com* [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

JAPAN: CARGO SHIP SINKS AFTER COLLISION

November 19 - A Japanese-flagged cargo vessel has capsized off Okinawa Port in Nakagasuku Bay, Japan after colliding with a Chinese ship, reports IHS Maritime 360. There was a reported oil leak from the ship, prompting responders to surround it with booms. *The Maritime Executive* [Read more](#)

THAILAND: OIL SLICK POLLUTES SOUTHERN BEACH

November 19 - An oil slick has appeared along a 10-kilometre stretch of beach in Nakhon Si Thammarat, chasing off tourists and triggering fears for the well-being of dolphins and other marine life.

Pithak Boripit, chief of Nakhon Si Thammarat's Sichon district, on Wednesday led a team of soldiers and police to inspect Bangdee-Saopao beach after a large oil slick was seen floating offshore. They reported that the slick contained dark globules of oil ranging in size from ping-pong balls to pomelos, and was floating along the beach over a distance of at least 10km. *Bangkok Post* [Read more](#) Related report in [Thai Visa Forum](#)

USA: "NO POLLUTION" REPORTED IN LATEST DEADLY GULF OIL RIG EXPLOSION

November 21 - A second fatal oil rig explosion has occurred in the Gulf of Mexico. However, media outlets report "no pollution" associated with the latest incident.

Overnight New Orleans news stations started reporting one death and multiple injuries associated with the explosion of a Fieldwood Energy oil rig, located roughly 12 miles off the Louisiana coastline. WGNO, the New Orleans' ABC affiliate, is reporting the Bureau of Safety and Environmental Enforcement says "no pollution" is associated with the incident, noting the Texas-based company's platform was not in production at the time of the incident. *Navarre Press* [Read more](#)

Other news reports from around the world

NEWS REPORTS FROM KOREA

November 18 - South Korea Launches New Agency to Replace Disbanded Coast Guard



South Korea launches a massive new government agency this week to handle emergency rescue and safety management seven months after a ferry disaster killed 304 people and was blamed by President Park Geun-hye on a failed response by the coast guard.

The coast guard is being broken up and its search and rescue duties are being moved to the new National Safety Agency that will have more than 10,000 staff and incorporate fire and emergency response teams, the government said on Tuesday.

gCaptain [Read more](#) Related report in [The Maritime Executive](#)

Other news reports from around the world (continued)

NEWS REPORTS FROM KOREA (Continued)

November 21 - Korea P&I Club: Most oil spills in East Asia

Oil spills from vessels occur most frequently in East Asian countries, said a speaker at the Korea Shipowners' Mutual Protection and Indemnity Association (Korea P&I Club)'s renewal strategy seminar in Seoul, South Korea, yesterday.

Alex Hunt, technical team manager at the International Tanker Owners Pollution Federation (ITOPF) said that 11.2% of spills of 211 incidents attended by ITOPF in the last 10 years since 2004 have occurred in China. South Korea placed second with 6.0%, followed by Japan with 4.8%. The remainder has happened in 64 different countries. *IHS Maritime 360* [Read more](#)

NEWS REPORTS FROM UK

November 14 - CIWM and ESA announce new strategic alliance



Photo: ESA chairman David Palmer Jones says that Resources & Waste UK will create a powerful new voice for the resource management industry

The Environmental Services Association (ESA) and the Chartered Institution of Wastes Management (CIWM) have announced that they will be working together more closely and creating a new independent entity called Resources & Waste UK. Related articles
Resource management firm FCC Environment unveils 'mapping the politics of waste' report

The two trade bodies announced the formation of this new entity at an event in London yesterday (13 November). *Eddie.net* [Read more](#)

NEWS REPORTS FROM USA

November 17 – University of South Florida gets \$20 million to study 1979 oil spill

The University of South Florida's College of Marine Sciences is getting a \$20.2 million grant to continue studying the impact of the 2010 Deepwater Horizon disaster, in part by studying another Gulf of Mexico oil spill that happened in 1979 (Ixtoc 1 Spill) *WCTV* [Read more](#)

November 17 - Latest Spill-Related Grants Announced

A conservation agency has announced more than \$99 million in projects funded through a settlement resulting from the 2010 Gulf of Mexico oil spill — including more than \$13 million for restoration work on Louisiana's coast.

The National Fish and Wildlife Federation announced the latest projects Monday. It marks the second round of grants from a program funded as a result of plea agreements between the U.S. Justice Department, BP and Transocean. *The New York Times* [Read more](#)

November 17 - BP asks judge to cap spill penalties at \$12 billion

BP wants a federal judge to cap its potential oil-spill pollution fines at a maximum of \$12.3 billion, a move that would cut away nearly a third of the penalties U.S. prosecutors are seeking for the Deepwater Horizon disaster.

The British oil giant argued in court papers Friday that the judge, in determining its fines, should disregard the higher penalties in Environmental Protection Agency and Coast Guard regulations because, it claimed, neither agency has the authority to raise maximum penalties above Congress's \$3,000-per-barrel cap for environmental liabilities under the Clean Water Act. *Fuel Fix* [Read more](#)

November 18 - New York National Guard Soldiers, Airmen brave cold to sharpen chemical, biological and radiological response skills

More than 375 New York National Guard Soldiers and Airmen sharpened their skills responding to chemical, biological, radiological or nuclear hazards during training at the Erie County Emergency Services Training and Operations Center Nov. 12-16 as part of a regional disaster response force. *Dvids* [Read more](#)

NEWS REPORTS FROM USA (Continued)

November 18 - Senate Defeats Bill on Keystone XL Pipeline in Narrow Vote

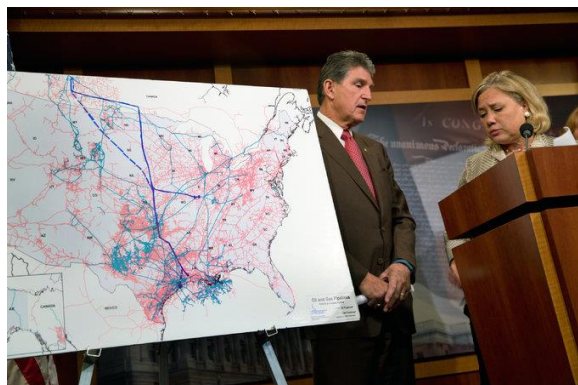


Photo: Senator Joe Manchin III of West Virginia and Senator Mary L. Landrieu of Louisiana after the Senate voted down the Keystone XL pipeline bill. Credit Stephen Crowley/The New York Times

Senate Democrats, by a single vote, stopped legislation that would have approved construction of the Keystone XL pipeline, one of the most fractious and expensive battles of the Obama presidency.

The vote represented a victory for the environmental movement, but the fight had taken on larger dimensions as a proxy war between Republicans, who argued that the project was vital for job creation, and President Obama, who had delayed a decision on building it.

The New York Times [Read more](#)

November 18 - Fears confirmed: Texas turtle in trouble

Photo by Michael Paulsen/Houston Chronicle

Texas' official sea turtle is on a slide that could eventually lead to extinction after a spectacular comeback and years of effort to save it, according to figures released Tuesday at a gathering of scientists and environmentalists.

Evidence that could link the 2010 BP oil spill to the decline of the world's most endangered sea turtle was presented Tuesday at a gathering of scientists and environmentalists.

A study presented at the Second International Kemp's Ridley Sea Turtle Symposium found oil in the carapace, or shell, of 29 sea turtles that returned to feed in the area of the oil spill in 2011 and 2012. *Chron.com* [Read more](#)



November 21 - Arctic Ecosystem Study in U.S., Canada Waters Launched

The Bureau of Ocean Energy Management (BOEM) and National Oceanographic Partnership Program (NOPP) partners announced the award of a broad Arctic study that will investigate the interrelationship among the physical, biological, chemical and social science components of the Beaufort Sea ecosystem from Barrow, Alaska, to the Mackenzie River delta in Canadian waters.

The Marine Arctic Ecosystem Study (MARES) is an integrated ecosystem research initiative coordinated and planned by BOEM in conjunction with its federal and private sector partners: U.S. Arctic Research Commission, U.S. Coast Guard, U.S. Geological Survey, U.S. Integrated Ocean Observing System, Marine Mammal Commission, National Science Foundation, National Oceanic and Atmospheric Administration, Office of Naval Research, and Shell Oil Company. *The Maritime Executive* [Read more](#)

People in the news

UK: ESA DIRECTOR GENERAL RETIRES AFTER 50 YEARS IN WASTE MANAGEMENT SECTOR



The Environmental Services Association (ESA) has announced the forthcoming retirement of its director general Barry Dennis after 22 years working with ESA.

Mr Dennis's tenure as ESA director general will finish on 31 December 2014 and a new executive director will be appointed. He will continue to be involved with the sector through his on-going involvement with the Chartered Institution of Wastes Management (CIWM).

In 1993, Dennis joined the National Association of Waste Disposal Contractors (NAWDC) as executive director then commercial director where, in 1996, he was involved in the decision to change the name to the Environmental Services Association (ESA). *EDIE.net* [Read more](#)

ISCO HONOURS DR MERV FINGAS, MEMBER OF ISCO COUNCIL REPRESENTING CANADA

The Executive Committee of ISCO is pleased to announce the award of Honorary Fellowship to Dr Merv Fingas of Canada.

Merv Fingas, M.Sc., Ph.D., worked for more than 33 years in the field of oil spill technology at Environment Canada's Environmental Technology Center in Ottawa, Ontario. As head of the Emergencies Science Division at the Centre, he conducted and managed research and development projects in the sciences as they relate to spill measurement, evaluation, and control. His specialties include spill dynamics and behaviour, studies of spill-treating agents, in-situ burning of oil spills, and remote sensing. He is called upon to make presentations on these subjects at international conferences around the world. Dr. Fingas earned his doctorate in environmental sciences from McGill University in Montreal, Quebec. He also holds master's degrees in science and business administration from the University of Ottawa in Ontario, as well as a bachelor of arts degree and technical training in machining and electronics. Dr. Fingas is on the editorial board of the Journal of Hazardous Materials, Petroleum Engineering, and the Journal of Petroleum Science and Engineering, and has served as guest editor for several special issues of these publications. In 1999, he was appointed to the United States Academy of Sciences and is a member of an eight-person committee to review the sources, fate, and effects of oil in the sea. Recently he was appointed to the NAS committee to study the fate and effects of Bitumen. He is now working independently in Alberta, Canada.



In the picture: The ISCO Delegation to the IMO OPRC-HNS TG13 meeting in 2012. From left to right, standing – Dr Wierd Koops, Hon.FISCO, (Netherlands); Dr Merv Fingas, Hon.FISCO, Member of ISCO Council for Canada; seated – John McMurtrie, Hon.FISCO, ISCO Secretary (UK); David Usher, Hon.FISCO, ISCO President (USA); Dr Douglas Cormack, Hon.FISCO (UK). Photo: Courtesy of Josée Lamoureux

Merv Fingas is a longstanding member and supporter of ISCO and has served as the Member of ISCO Council for Canada for the past seven years. He has supported the ISCO delegation to the IMO OPRC-HNS Technical Group at IMO meetings and has contributed several serialised technical articles to the ISCO Newsletter on subjects that included Oil Spill Remote Sensing, In-situ Burning and, most recently, Bitumens and Diluted Bitumens from Western Canadian Oil Sands. He contributed to ISCO's International Forum earlier this year, presenting a paper at the event.

ISCO's President, David Usher, recounts that they first met about 30 years ago when Merv joined the ASTM F20 Committee. Dave recalls that Merv was well received and respected for his knowledge. Merv's first introduction to ISCO was in 2007, the year in which ISCO, as the only NGO representing the international spill control industry, was awarded Consultative Status at IMO. Merv joined the ISCO delegation to the OPRC-HNS Technical Group meeting held that year in Southampton. In recognising the considerable contribution Merv has made and welcoming him to fellowship of ISCO, David Usher said how glad he is that the organization has decided to honour him in this way.

ISCO AT CLEAN GULF 2015, SAN ANTONIO, TEXAS – DECEMBER 2-4

ISCO President David Usher, Membership Director Mary Ann Dagleish, and ISCO Member Helena Rowland will be in attendance at Booth 142 in the Exhibition Area. Please come by to visit.

ISCO, with members in 45 countries, represents the worldwide Spill Response Community. The organization 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. Membership is open to companies, individuals and many other entities with an interest in oil and HNS pollution control. You can join ISCO at Clean Gulf.

INFORMAL GET-TOGETHER FOR ISCO MEMBERS DURING CLEAN GULF

ISCO President David Usher is looking at options for organising an informal get-together during the Clean Gulf conference. We are aware of many of our corporate members in the list of exhibitors but if you are attending as an individual we might miss out on meeting up with you.

Please therefore do let us know if you are going to be at Clean Gulf – this will help us gauge numbers for planning purposes.

Just drop an email to info@spillcontrol.org

BITUMENS AND DILUTED BITUMENS FROM WESTERN CANADIAN OIL SANDS: CHAPTER 3



A short series of articles on Bitumens and Diluted Bitumens from Western Canadian Oil Sands contributed by Dr Merv Fingas of Spill Science, Edmonton, Alberta, Canada T6W 1J6 fingasmerv@shaw.ca

Merv Fingas MSc PhD worked for more than 35 years in the field of oil spill technology at Environment Canada's Environmental Technology Center in Ottawa, Ontario. As head of the Emergencies Science Division at the Centre, he conducted and managed research and development projects. He is currently working independently in Alberta. Dr Fingas is the Member of ISCO Council for Canada.

Bitumens and Diluted Bitumens from Western Canadian Oil Sands

This serial covers the topic of bitumen products such as from the Canadian Oil Sands and diluted bitumen products (Dilbit and others). This is the third of nine issues by Dr. Merv Fingas, Member of ISCO Council for Canada.

1.3.4 Oil and Petroleum Product Properties

The properties of oil discussed here are viscosity, density, specific gravity, solubility, flash point, pour point, distillation fractions, interfacial tension, and vapour pressure.

Viscosity is the resistance to flow in a liquid (Fingas, 2012). The lower the viscosity, the more readily the liquid flows. For example, water has a low viscosity and flows readily, whereas honey, with a high viscosity, flows poorly. The viscosity of the oil is largely determined by the amount of lighter and heavier fractions that it contains. The greater the percentage of light components such as saturates and the lesser the amount of asphaltenes, the lower the viscosity.

As with other physical properties, viscosity is affected by temperature, with a lower temperature giving a higher viscosity. For most oils, the viscosity varies as the logarithm of the temperature, which is a very significant variation. Oils that flow readily at high temperatures can become a slow-moving, viscous mass at low temperatures. In terms of oil spill cleanup, viscosity can affect the oil's behavior. Viscous oils do not spread rapidly, do not penetrate soil as readily, and affect the ability of pumps and skimmers to handle the oil. Dilbits and Sybit start out at a viscosity of about 300 mPa.s, which is like that of light syrup. Weathered Dilbits slowly return to the density of the starting bitumen as shown in Figure 2.



Figure 2 A view of weathered Dilbit showing the viscosity increase after about four days of weathering. The viscosity of the product after spilling slowly returns to the properties of the starting bitumen.

Density is the mass (weight) of a given volume of oil and is expressed in grams per cubic centimetre (g/cm^3) or equivalently kilograms per cubic metre (kg/m^3). It is the property used by the petroleum industry to define light or heavy crude oils. Density is also important as it indicates whether a particular oil will float or sink in water. As the density of water is 1.0 g/cm^3 at 15°C and the density of most oils ranges from 0.7 to 0.99 g/cm^3 , most oils will float on water. The density of most bitumens range from 0.997 to as high as 1.016 . As the density of seawater is 1.03 g/cm^3 , even heavier oils will usually float on it. Many bitumens sink in fresh water. As the light fractions evaporate with time, the density of oil increases, such as is the case for Dilbits.

Another measure of density is specific gravity, which is an oil's relative density compared to that of water at 15°C . Another gravity scale is that of the American Petroleum Institute (API). The API gravity is based on the density of pure water which has an arbitrarily assigned API gravity value of 10° (10 degrees). Oils with progressively lower specific gravities have higher API gravities. The following is the formula for calculating API gravity: $\text{API gravity} = [141.5 \div (\text{density at } 15.5^\circ\text{C})] - 131.5$. Oils with high densities have low API gravities and vice versa. In the United States, the price of a specific oil may be based on its API gravity as well as other properties of the oil.

Solubility in water is the measure of how much of a given oil will dissolve in the water column on a molecular basis. Solubility is important in that the soluble fractions of the oil are sometimes toxic to aquatic life, especially at higher concentrations. As the amount of oil lost to solubility is always small, this is not as great a loss mechanism as evaporation. In fact, the solubility of oil in water is so low (generally less than 100 parts per million) that it would be the equivalent of approximately one grain of sugar dissolving in a cup of water. Most bitumens have a very low solubility in water; however, Dilbits contain several soluble fractions. This is typically not sufficient, however, to cause fish toxicity except in confined waters.

Special feature (continued)

The flash point of an oil is the temperature at which the liquid gives off sufficient vapours to ignite upon exposure to an open flame. A liquid is considered to be flammable if its flash point is less than 60°C. There is a broad range of flash points for oils and petroleum products, many of which are considered flammable, especially when fresh. Gasoline, which is flammable under all ambient conditions, poses a serious hazard when spilled. Many fresh crude oils have an abundance of volatile components and may be flammable for as long as one day until the more volatile components have evaporated. Dilbit can be flammable, whereas the bitumen is not at all.

The pour point of an oil is the temperature at which it takes longer than a specified time to pour from a standard measuring vessel. As oils are made up of hundreds of compounds, some of which may still be liquid at the pour point, the pour point is not the temperature at which the oil will no longer pour. The pour point represents a consistent temperature at which an oil will pour very slowly and therefore has limited use as an indicator of the state of the oil. In fact, pour point has been used too much in the past to predict how oils will behave in the environment. For example, waxy oils can have very low pour points, but may continue to spread slowly at that temperature and can evaporate to a significant degree. Because pour point is not the solidification point of oil, it is not the best predictor of how oil will behave or even more specifically, how it will move in the environment.

Distillation fractions represent the fraction of an oil (generally measured by volume) that is boiled off at a given temperature. This data is obtained on most crude oils so that oil companies can adjust parameters in their refineries to handle the oil. This data also provides environmentalists with useful insights into the chemical composition of oils. For example, while 70% of gasoline will boil off at 100°C, only about 5% of a crude oil will boil off at that temperature and an even smaller amount of a typical bitumen. The distillation fractions correlate strongly to the composition of the oil and to other physical properties of the oil.

The oil/water interfacial tension, sometimes called surface tension, is the force of attraction or repulsion between the surface molecules of oil and water. Together with viscosity, surface tension is an indication of how rapidly and to what extent oil will spread on water. The lower the interfacial tension with water, the greater the extent of spreading. In actual practice, the interfacial tension must be considered along with the viscosity because it has been found that interfacial tension alone does not account for spreading behavior.

The vapour pressure is a measure of how the oil partitions between the liquid and gas phases, or how much vapour is in the space above a given amount of liquid oil at a fixed temperature. Because oils are a mixture of many compounds, the vapour pressure changes as the oil weathers. Vapour pressure is difficult to measure and is not frequently used to assess oil spills.

While there is a high correlation between the various oil properties, these correlations should be used cautiously as oils vary so much in composition (Jokuty et al., 1995). For example, the density of many oils can be predicted based on their viscosity. For other oils, however, this could result in errors. For example, waxy oils have much higher viscosities than would be implied from their densities. There are several mathematical equations for predicting one oil property from another property, but these must be used carefully as there are many exceptions.

The measurement of oil properties is an important consideration. While there are many standards for measuring fuel, e.g., ASTM, many of these standards are not applicable to crude oils and especially not to heavier bitumens and not to Dilbits. Similarly, many of the apparatuses for measurement are only appropriate for lighter fuels.

References:

Fingas, M.F., The Basics of Oil Spill Cleanup: Third Edition, CRC Press, Boca Raton, FL, 256 p, 2012.

Jokuty, P., M. Fingas, S. Whiticar, and B. Fieldhouse, "A Study of Viscosity and Interfacial Tension of Oils and Emulsions", Manuscript Report EE-153, Environmental Protection Service, Environment Canada, Ottawa, ON, 43 p, 1995.

Contributed article

CLEANING UP AN OIL SPILL WITH A 30 M EST OIL SPILL CATAMARAN BARGE

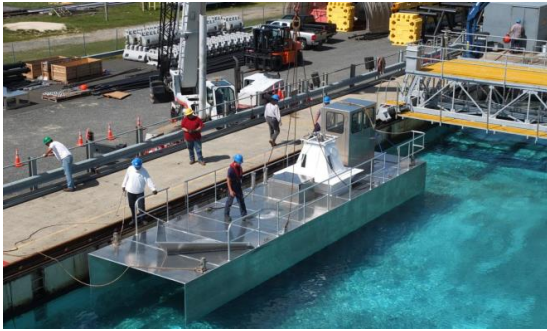
A short article submitted by David Prior of Extreme Spill Technology describes an innovative oil skimming system

Extreme Spill Technology (EST) performed early development work with funding provided by a Norwegian oil-services company, Altinex ASA. In 2011, EST secured funding under the Canadian Innovation

Commercialization Program which allowed EST to design and build a 12 m prototype and test it at Ohmsett in 2012. This vessel demonstrated Throughput Efficiencies of 94% in calm conditions and 90% in waves.

Also in 2012, the Chinese Coast Guard arranged a demonstration on the ocean of a 6 m EST skimmer recovering bunker C, again with extremely high efficiency.



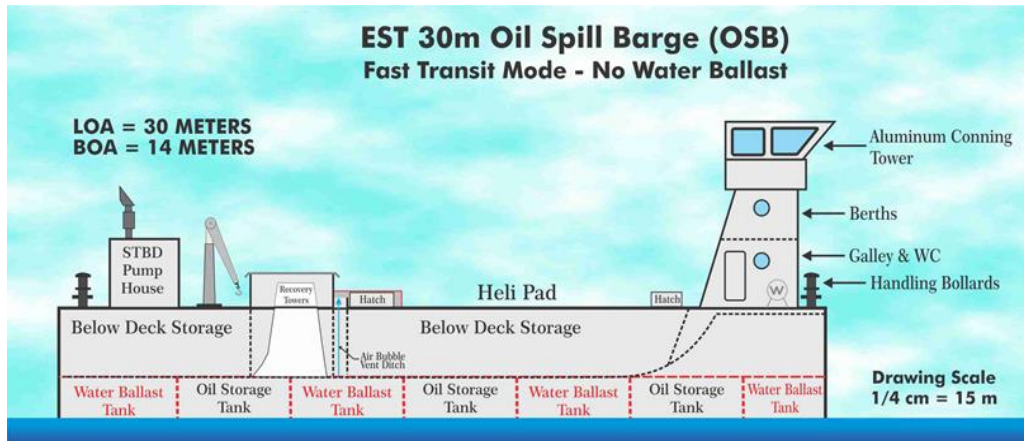


The secret to EST's performance is that there are no moving parts for wave energy, heavy ice or heavy oil to disrupt.

This simplicity allows a large, ocean-going skimmer vessel that requires very low maintenance to be built at reasonable cost.

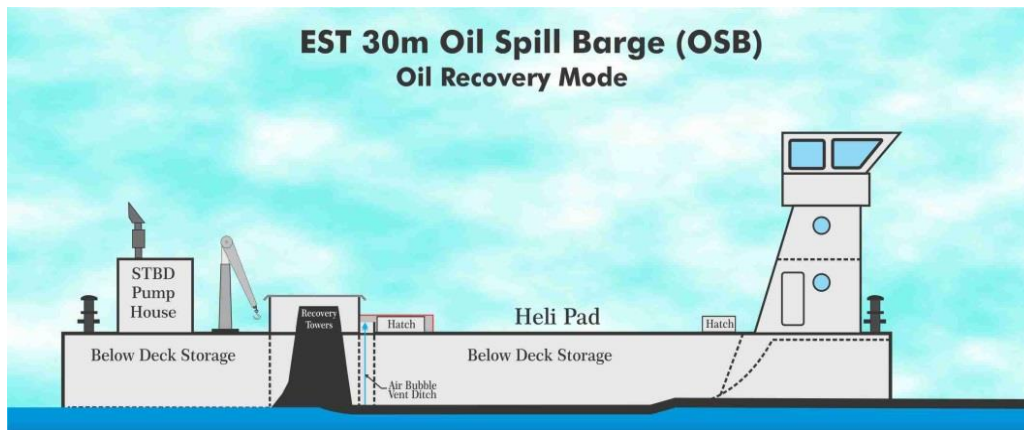
A 30 m EST Oil Spill Barge, or OSB, can effectively recover oil spills at sea when it is impossible to use conventional mechanical equipment and floating booms, or to burn the oil, or to chemically disperse it.

Difficult conditions occur regularly on open ocean waters and ice-covered seas.



When the Oil Spills at an Offshore Oil Rig:

The EST Oil Spill Barge (OSB) is permanently stationed approximately 1 nautical mile (2,000 m) from the oil rig, except when severe storms are forecast. Logistics are not an issue since the OSB is already fully-equipped. In Beaufort Sea States 7 or less, the OSB is fully functional. More challenging conditions may require a larger barge and perhaps EST Arctic accessories.



Operating the OSB is straightforward and requires little training:

A PSV attending the oil rig steams to the OSB, puts onboard the 4-5 crew required to operate the OSB, and takes it under tow by connecting the two OSB bow steering cables;

The two steering cables, from port and starboard bow winches on the OSB, are connected to the stern of the PSV. This

allows the crew in the conning tower of the OSB to optimize oil recovery by altering the lengths of the two steering cables and thereby veer the OSB to port and starboard;

When the steering cables are secured, the OSB casts off its mooring bridle or turns off its dynamic positioning and is towed to the leading edge of the oil slick;

The above process takes approximately one hour with a well-practiced crew. The various tasks should be performed with military precision, as if it was a fire drill;

The first job is to fill the oil recovery towers with seawater by adding enough seawater ballast to bring the open bottoms of the towers in contact with the sea surface;

When the pumps at the top of the sealed towers are turned on, each tower acts like a straw and sucks seawater to the top. This forms columns of water higher than the surrounding sea. The pumps are then turned off;

When the OSB enters the oil slick, the towers trap the oil. The oil enters the open bottoms of the water-filled towers and floats to the tops where it is automatically pumped to onboard storage tanks.

The pumps are controlled by sensors and a microprocessor. The OSB operators can then transfer the oil from the onboard storage tanks to larger tanks on the PSV doing the towing, or into towable floating bladders which are cast off when full, or into another vessel travelling alongside or behind. [More info](#)

THE NETHERLANDS: INTERSPILL CONFERENCE AND EXHIBITION REGISTRATION OPENS, WITH AN EXPANDED CONFERENCE PROGRAMME

On 7 November 2014, conference delegate registration opened for Interspill 2015, with an Early Bird incentive rate available for those booking before 31 December 2014.

The Conference Programme has been boosted by a record number of abstracts from the call for papers which closed in August. Over 150 abstracts have been received, and this has led to a third stream being added to the Conference Programme on Wednesday 25th March.

Conference Chairman, Rob James of OSRL said "The record number of abstracts were of very high quality and reflected our range of issues well. It has been difficult to select from the choice, and we have extended the number of papers to be presented by 20% and have selected over 30 papers for Poster presentations. This is in addition to the papers that will be presented as part of the Spill Industry Seminar and the Science Workshops.

The 2015 Programme is very exciting, and is a reflection of the position that the Interspill event has achieved since its launch in 2000. My hope is that this programme will stimulate even higher numbers of delegates to attend."

Online registration is available at: <http://www.interspill2015.com/register> For further information see www.interspill.org and contact Roger Mabbott, Director, Interspill Ltd at info@interspill.org or on +44 (0)845 625 9890 For information on RAI Amsterdam - www.rai.nl/en/ For information on SRGH – www.srgh.nl/ For information on Reed Exhibitions - www.reedexpo.com/ Ltd., E info@interspill.org W www.interspill.org

CYPRUS: MEDITERRANEAN OIL INDUSTRY GROUP OIL SPILL WORKSHOP SPEAKERS

Nicosia, Cyprus. 10-11 December 2014 - The main objectives of the workshop are to improve communication within and throughout industry groups, establish clear recommendations and guidelines on resource placement/availability, benefiting from Manufacturers and Responders technical advances in response systems and clarify expectations reducing duplication.

Speakers include Houcine Mejri (MOIG Director), Efstratios Georgoudis, Ioannis Efstratiou (Cyprus Merchant Shipping Dept.), Khaled El Haw (International Planner), Khaled Tohamy (Tunisia Oil Spill Exercise Director), Andy Varoshotis (President, Cyprus Oil and Gas Association), Geraint Richards (Lamor Corp.), Henrik Jensen (Desmi Ro-Clean A/S), Steve Pigg (Swire ERS), George Kirkos (Shipcon), David Cook (NRC), Captain Richard Byrnes (CEO-IEMS). The two-day event concludes with an open discussion and dinner hosted by MOIG. For more information and detailed programme please contact houcine.mejri@moig.org.tn or info.moig@planet.tn The Flyer is also available on the MOIG Website on the main page and at the following address : http://www.moig.org/downloads/flyers/moig_workshop_dec1014.pdf. The registration is open until 28 November 2014 via the MOIG Website, click "COMPLETE THE APPLICATION FORM" link situated at the bottom of the flyer and click submit it will be sent automatically to MOIG secretariat.

USA: OHMSETT STAFF TO PRESENT AT CLEAN GULF 2014

Ohmsett staff will exhibit and present a paper at the Clean Gulf 2014 Conference in San Antonio, Texas. Attend Session 6C where Bill Schmidt and Dave DeVitis will present the Development of an Oil Delivery System to Create Neutrally Buoyant Oil Plumes and Test Methods for the Evaluation of Tracking Detection Systems. <http://www.ohmsett.com/>

Links for recent issues of other publications

[ASME EED EHS Newsletter](#)
[Bow Wave](#)
[Cedre Newsletter](#)
[The Essential Hazmat News](#)
[USA EPA Tech Direct](#)
[USA EPA Tech News & Trends](#)
[Technology Innovation News Survey](#)
[Intertanko Weekly News](#)
[CROIERG Enews](#)
[IMO Publishing News](#)
[IMO News Magazine](#)
[Pollution Online Newsletter](#)
[EMSA Newsletter](#)
[JOIFF "The Catalyst"](#)
[Environmental Technology Online](#)
[OCIMF Newsletter](#)
[IPIECA eNews](#)
[WMU Newsletter](#)
[AMSA Aboard](#)
[Sea Alarm Foundation Newsletter](#)
[Regenesis Remediation News](#)

News and commentary on HSE issues from George Holliday
Sam Ignarski's Ezine on Marine & Transport Matters
News from Cedre in Brittany, France
Alliance of Hazardous Materials Professionals
Remediation of contaminated soil and groundwater
Contaminated site clean-up information
From US EPA - Contaminated site decontamination
International news for the oil tanker community
Canberra & Regions Oil Industry Emergency Response Group
New and forthcoming IMO publications
News from the International Maritime Organization
News for prevention & control professionals
News from the European Maritime Safety Agency
Int'l Organisation for Industrial Hazard Management
Environmental Monitoring, Testing & Analysis
News from the Oil Companies International Marine Forum
Int'l Petroleum Industry Environmental Conservation Assoc'n
From the World Maritime University in Malmo, Sweden
News from the Australian Maritime Safety Authority
News from the Sea Alarm Wildlife Protection Organisation
Case studies, articles and upcoming events in Europe

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OSRL HAS RELEASED ITS TRAINING DIRECTORY FOR 2015

Oil Spill Response Ltd. has announced its 2015 spill response training schedule Training Dates & Venues . The programme is its most comprehensive, it includes its popular established courses and due to many requests received from the Industry it introduces five additional courses.

New courses:

- **Oil Spill Modelling Workshop** - Develop knowledge of oil spill modelling for planning and decision making [WEB](#) [PDF](#)
- **Aerial Surveillance** - Learn skills required to act as a First Responder in the role of an Aerial Surveillance Observer [WEB](#) [PDF](#)
- **Advanced Responder** - With 9 practical exercises it's a unique opportunity to gain in-depth knowledge of spill response [WEB](#) [PDF](#)
- **Dispersant Application Monitoring Workshop** - Understand the opportunities and limitations of this response tool [WEB](#) [PDF](#)
- **Offshore Vessel Crews e-learning** - Developed to give First Responders the knowledge to respond quickly and effectively to an offshore oil spill [WEB](#) [PDF](#)

Established courses:

- **IMO 3 - Oil Spill Management Workshop** - Become confident to manage an oil spill incident. Essential training for key decision-makers [WEB](#) [PDF](#)
- **IMO 2 - Oil Spill Clearance** - This is our popular oil spill response knowledge-building course. A great training experience with 3 practical exercises [WEB](#) [PDF](#)
- **IMO 2 - Oil Spill Preparedness & Response (USA)** - Americas focus, it provides the knowledge needed by Supervisors/On-Scene Commanders [WEB](#) [PDF](#)
- **IMO 2 - Oil Model Training (Asia Pacific)** - Training with an Asia Pacific focus, for Marine Incident Command Team members [WEB](#) [PDF](#)
- **IMO 1 - Site Supervisor (Beachmaster)** - Develop the skills and knowledge required to supervise a tactical response team in a shoreline/harbour incident [WEB](#) [PDF](#)
- **Inland Oil Spills** - Learn how to minimise the environmental impacts of an inland spill [WEB](#) [PDF](#)
- **Oil Spill Operator (First Responder)** - Hands-on training for First Responders [WEB](#) [PDF](#)
- **Oil Spill Refresher IMO 1 to 3 & MCA 3/3P to MCA 5/5P** - Refreshes your training certificates. Must be taken within 39 months of your original course [WEB](#) [PDF](#)
- **Shoreline Spill response & SCAT** - Shoreline spill response and Shoreline Clean-up Assessment Techniques (SCAT) training [WEB](#) [PDF](#)
- **Environmental Advisor's Field Course** - Understand and minimise the impact of oil spills on the environment [WEB](#) [PDF](#)
- **Oiled Wildlife Response Planning** - Assess wildlife preparedness needs to develop effective response planning [WEB](#) [PDF](#)
- **ICS 100 & ICS 200 e-learning** - Incident Command System training [WEB](#) [PDF](#)
- **UK DECC 1 e-learning** - On-Scene Commander / OIM (Offshore Installation Manager) training (UKCS) [WEB](#) [PDF](#)
- **UK DECC 2 Corporate Manager** - Training for any individual who is part of, or an advisor to, an onshore management team (UKCS) [WEB](#) [PDF](#)
- **UK DECC 3 Onshore Emergency Responder** - Specifically for Onshore Emergency Responders, Emergency Room Managers and Advisors. (UKCS) [WEB](#) [PDF](#)
- **UK DECC 4 UK Response & Control** - Training required to perform the role of On-Scene Commander (UKCS) [WEB](#) [PDF](#)
- **DECC Refresher- Refreshes your DECC training certificate.** Must be taken within 39 months of your original course [WEB](#) [PDF](#)
- **Customised Training** - We will work with you to build your own course and deliver it to your requirements [WEB](#) [PDF](#)
- **SWIS Capping Workshop** [WEB](#) [PDF](#) **SWIS Appreciation e-learning** [WEB](#) [PDF](#)

The Training Directory is available as a CDs and brochure and these will be sent in the next few weeks, if you require a hard copy let us know and we will send you one. Remember to book early, we expect many of the courses to sell out again this year, [book here](#). If you need help or advice please contact us. We look forward to hearing from you

vincentgoh@oilspillresponse.com - for Asia Pacific and Oceania training enquiries stevewoods@oilspillresponse.com - for training enquiries from all other regions

AUSTRALIA: AMOSC 2015 TRAINING CALENDAR

AMOSC is pleased to announce that all of the 2015 courses are now available for booking through our training website. This includes our internationally accredited courses - Course in Oil Spill Response Operations (IMO I), Course in Oil Spill Response Management (IMO II), Course in Oil Spill Response Command & Control (IMO III) and our additional qualification courses - Aerial Observation and Shoreline Assessment & Cleanup.

AMOSC's full suite of courses - will be delivered at both the Geelong and Fremantle training centres.

Course enrolment will not be permitted unless credit card payment (VISA or Mastercard only) is made at the time of booking. Bulk bookings of 4 or more people on any one course can be made by contacting AMOSC directly, all other bookings will need to be made through the [online booking system](#). AMOSC [Read more](#)

Training (continued)

UK: INTRODUCTION TO GIS USING ARCGIS JAN 2015

This action packed two day course is structured to maximise your knowledge of GIS. Starting at the very basics, you will be taken through the key elements of a GIS and leave with the ability to independently tackle real world spatial problems within your corporate environment. [More info](#)

Contracts and tenders

CALL FOR PROPOSAL FOR THE PROVISION OF CONSULTANCY SERVICES FOR THE REVISION OF THE REGIONAL STRATEGY FOR PREVENTION OF AND RESPONSE TO MARINE POLLUTION FROM SHIPS

Proposals for the provision of consultancy services for the revision of the Regional Strategy for Prevention of and Response to Marine Pollution from Ships should be sent to rempec@rempec.org, at the earliest convenience, but not later than 27 November 2014. **REMPEC** [More info](#)

Company news

ISCO CORPORATE MEMBER, AYLES FERNIE INTERNATIONAL COMPLETES ON NEW AERIAL DISPERSANT SYSTEM



Photo on left: NIMBUS C295 - Flight Testing Photo Courtesy of Airbus Defence & Space

AYLES FERNIE INTERNATIONAL has reported the successful delivery of their new NIMBUS C295 aerial dispersant spray system for the Airbus C295 aircraft. The systems were ground and flight tested at the Airbus Defence & Space facility in Seville, Spain in early 2014.

The systems, with associated Ground Support Equipment, also supplied by Ayles Fernie, are now delivered to the aircraft operator and ground and flight training provided by Ayles Fernie and Airbus Defence & Space (Airbus DS) instructors is scheduled for early 2015.

Photo on right: NIMBUS C295 - Pressure Filling Photo Courtesy of Airbus Defence & Space

The NIMBUS C295 system, which has been successfully integrated into the C295 aircraft by Ayles Fernie and Airbus DS engineers, utilises the Ayles Fernie patented design concept for aerial dispersant systems where the modules can be installed with minimum or no modification to the aircraft. The system features 3 tank modules with a total capacity of 6000 litres and a combined Pump/Spray Arm module which is located on the Ramp. All modules are secured on the standard aircraft Cargo Handling System and the system can be installed within 45 minutes by a trained crew.

Ayles Fernie Managing Director, Bill Fernie, has described the Airbus C295 as an excellent platform for the NIMBUS system and the Ayles Fernie/Airbus DS team are looking forward to training the flight and ground crews on the system in 2015.



For Further information on the NIMBUS C295 system or the C295 aircraft, contact: Ayles Fernie: sales@aylesfernie.co.uk
Website: <http://www.aylesfernie.co.uk/> Airbus Defence & Space: marketing@military.airbus.com

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