

ISCO & THE ISCO NEWSLETTER

The International Spill Control Organization, a not-for profit organization 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 Intergovernmental, Governmental, NGO's and interested groups and individuals

ISCO holds consultative status at the International Maritime Organisation and observer Status at International Oil Pollution Compensation Funds

ISCO COMMITTEE & COUNCIL ISCO is managed by an EXECUTIVE

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• Mr John McMurtrie, VP and Editor	(UK)
Ms Mary Ann Dalgleish, VP M'ship	(USA)

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Mr Kerem Kemerli	(Turk
Mr Marc Shaye	(USA)
Mr Dan Sheehan	(USA)
Captain Bill Boyle	(UK)
Lord Rickaby	(UK)
Mr Matthew Sommerville	(UK)

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Mr John McMurtrie	(UK)
Ms Mary Ann Dalgleish	(USA)
• Captain Bill Boyle	(UK)
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INTERNATIONAL NEWS

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IMO SECRETARY-GENERAL URGES STATES TO SUPPORT UN CO-ORDINATED PLAN TO TRANSFER OIL FROM DEGRADING FLOATING STORAGE UNIT OFF YEMEN

International Maritime Organization (IMO) Secretary-General Kitack Lim has urged further financial support for a UN-coordinated operational plan to address the threat of a major oil spill from the FSO Safer, moored off Yemen, after a pledging event in The Hague saw donors pledging US\$33 million in new funding.

"In the face of an impending environmental disaster, we must do all we can to prevent it. We must act now," Mr. Lim said. "The time is now. The risks are high. We must act to avert disaster."

IMO has been supporting contingency planning efforts in the region to prepare for a possible spill from FSO SAFER and to limit the impacts should one occur. An oil spill from FSO Safer would be a humanitarian and environmental disaster, with huge economic impacts for the shipping and maritime industry throughout the region.

The plan to mitigate the risk by transferring the oil to a safe temporary vessel needs financial resources, Mr. Lim said.

There is now \$40 million available for the operation, which includes previously committed funds. The decaying floating storage and offloading unit is moored off the coast of Yemen and holds around a million barrels of oil. It could break apart or explode at any time.

The <u>pledging event</u>, hosted by the Government of the Netherlands and the United Nations, marked the start in the effort to raise the US\$144 million that the full plan requires, including US\$80 million for the emergency operation to transfer the oil to a safe temporary vessel. Also critical to the plan's success is the installation of a long-term replacement capacity.

Read more here:

https://www.imo.org/en/MediaCentre/HotTopics/Pages/FSO-SAFER-oil-spill-risk.aspx

ISCO AMBASSADORS

(Members with special responsibilities in specified geographical areas)

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China

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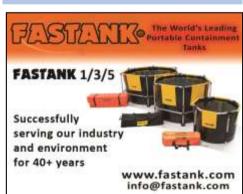
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ISCO NEWS

INTERSPILL IN AMSTERDAM UPDATE

ISCO Committee Member Captain Bill Boyle and ISCO Member Helena Rowland are looking forward to seeing you at Booth A11 in the Exhibition Hall. It will be a great opportunity for you to catch up on all the latest developments at ISCO.

Unfortunately Secretary-General, Neil Marson, regrets that he be unable to be at Interspill and is very disappointed that he can't be there to see you all.

Other ISCO Committee Members who will be at Interspill include former Secretary-General Matthew Sommerville and Kerem Kemeli from Turkey. Member of ISCO Council for the Netherlands, Dennis van der Veem will also be attending.

This year there's a strong representation of Members at Interspill. At least fifteen Corporate Members or Industry Partners, including Balaena, Briggs, Cedre, Darcy, Desmi, Fastank, IOPC Funds, Lamor, Markleen, Meke Marine, Ohmsett, OSRL, Rutter, Surfcleaner, and Vikoma will be in the Exhibition Hall. Please make sure to visit their stands and apologies if I missed anyone out. Exhibition Floor Plan

There's an excellent Conference Programme and ISCO members acting as session chairs or speakers include representatives from Polaris, OSRL, Ohmsett, Cedre, Sea Alarm and Owens Coastal Consultants, amongst others.

Other special activities at Interspill include webinars, workshops and training opportunities. More information about these events can be found by visiting https://spillcontrol.org/upcoming-events/ and https://spillcontrol.org/upcomingwebinars/. Also, SRGH is organising a Monday onwater demonstration on the River Amstel https://www.interspill.org/about-interspill/on-water-demonstration/ Please also see on Page 3 the IOPC Funds post regarding training events . If you haven't already registered to be at Interspill, there's still time – Please visit: https://www.interspill.org/

MORE INTERNATIONAL & REGIONAL NEWS

H2-INDUSTRIES SET TO CLEAR THE OCEANS OF PLASTIC WASTE AND PRODUCE CLEAN FUEL FROM **INNOVATIVE SHIP DESIGN**

May 21 - H2-Industries and TECHNOLOG Services, a naval architecture company, have joined forces to develop 3D designs for an innovative concept ship that will collect plastic waste that currently blights the world's oceans and then converts it into clean hydrogen, allowing surplus hydrogen to be shipped back to shore. Hellenic Shipping News / Read more

MEDITERRANEAN STRATEGY FOR THE PREVENTION OF. PREPAREDNESS AND RESPONSE TO MARINE **POLLUTION FROM SHIPS (2022-2031)**



MORE INTERNATIONAL & REGIONAL NEWS (CONTINUED)



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For information contact
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spillcontrol@mwadigital.com

May 23 – On 19 May 2022, the MOIG Director was invited by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) to online presentation on the Mediterranean Strategy for the Prevention of, Preparedness, and Response to Marine Pollution from Ships (2022-2031); delivered by Gabino Gonzalez, REMPEC Director.

Gabino Gonzalez started by introducing the Mediterranean Strategy for the Prevention of, Preparedness, and Response to Marine Pollution from Ships (2022-2031); adopted by the Contracting Parties to the Barcelona Convention, in 2021 (Decision IG.25/16). He underlined that the Mediterranean Strategy (2022-2031) sets seven Common Strategic Objectives (CSOs), which apply to the Mediterranean region as a whole, and Contracting Parties to the Barcelona Convention, alongside the various organizations and institutions of the Mediterranean. MOIG / Read more

WHAT YOU NEED TO KNOW ABOUT STOCKHOLM+50

May 25 - On 2 and 3 June 2022, world leaders and representatives from government, business, international organizations, civil society and youth will gather in Sweden for Stockholm+50 — an international meeting to drive action towards a healthy planet for the prosperity of all.

The event comes at a crucial time as the Earth is in emergency mode, and urgent action is needed to address the triple planetary crisis of climate change, nature and

biodiversity loss, and pollution and waste. So what exactly is Stockholm+50, and why is it important? UNEP / Read more

EMSA SNIFFER DRONE MONITORING SULPHUR AND NITROGEN EMISSIONS FROM SHIPS OPERATING IN THE CHANNEL

May 25 - From Cap Gris-Nez on the Pas-de-Calais coast in the north of France, EMSA remotely piloted aircraft are being used by the French Directorate General of Maritime Affairs, Fisheries and Aquaculture to measure sulphur and nitrogen emissions from ships operating in the Emission Control Area (ECA) of the North Sea and English Channel. The payload on board the sniffer drone makes it possible to check the compliance of the passing ships with rules capping the content of certain pollutants in the fuel burned.

The North Sea and English Channel make up an Emission Control Area within which ships must adopt specific mandatory measures to prevent, reduce and control pollution of the atmosphere by emissions of nitrogen oxide, sulphur oxide and particles. These help to reduce the harmful effects on human health and the environment. Emissions monitoring is the principal objective of the operation but the aircraft also has the capability of being deployed on request for an array of complementary tasks such as pollution detection, search and rescue, fisheries control and vessel traffic management, within the area of operation. EMSA / Read more

IOPC FUNDS SET TO DELIVER COURSES, TRAINING ACTIVITIES AND CONFERENCE PRESENTATIONS AT INTERSPILL 2022

May 27 - The IOPC Funds are delighted to support Interspill 2022, the European oil spill conference and exhibition which will take place at the RAI Exhibition Centre, in Amsterdam, the Netherlands, from 21-23 June 2022.

As an official supporter of the event and member of the organising committee, the IOPC Funds Secretariat is involved in the organisation of the event and is set to deliver presentations and chair sessions during the conference, hold an exhibition stand, and run a number of training activities, including several interactive sessions as part of the new Interspill Academy.

Claims and compensation training course - Prior to the conference, on Monday 20 June, the IOPC Funds will deliver a free training course aimed at professional responders and government officials. It will focus on how costs may be recovered more efficiently and how compensation is paid in the event of a tanker spill under the international oil pollution liability and compensation regime. This two-hour course will provide guidance on how to submit claims for compensation for clean-up operations, as well as economic losses, environmental monitoring studies and reinstatement measures, and will include a number of case studies and practical examples (read more here).

Interspill Academy – An interactive session on pollution response claims - On Tuesday 21 June, after the completion of day one of the conference, the IOPC Funds and the International Group (IG) of P&I Clubs will run a one-hour interactive session to showcase how the two organisations deal with claims for compensation for response activities following an oil spill. The session will introduce the liability system, before turning to a face-to-face panel discussion between the IOPC Funds and IG Club representatives on the frequent issues that they encounter when dealing with response claims (read more here).

Interspill Academy – An interactive session on HNS Reporting and contributions - This session will be a joint one-hour session, also at the end of Tuesday, 21 June, to be delivered by the IOPC Funds and VNCI (the Dutch Chemical Industry). Following a short presentation on the 2010 HNS Convention and corresponding reporting guidelines, a face-face discussion with the representative

MORE INTERNATIONAL & REGIONAL NEWS

from VNCI will focus on the issues still facing the chemical industry as well as those issues already resolved as a result of the cooperation between the various parties engaged in the process of bringing into effect the provisions of the HNS Convention, in particular with regards to reporting and contributions (read more here).

Interspill Academy – An interactive session on Claims for environmental damage and post spill studies - A further one-hour interactive session will take place on Wednesday, 22 June focusing on how claims for environmental damage and post-spill monitoring studies are covered and assessed under the existing international liability conventions. A panel discussion between IOPC Funds and ITOPF representatives will explore the frequent issues encountered when dealing with claims for environmental damage and how claims for post-spill monitoring studies are assessed, all illustrated using practical examples of real-life cases.

Interspill Academy – An interactive session on HNS tools and guidelines - The final interactive session to be delivered will be a joint session on Wednesday, 22 June with the IOPC Funds and REMPEC (the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea). It will commence with a short presentation by the IOPC Funds, before an open forum with the representative from REMPEC, concentrating on the tools, guidelines and plans already in place to deal with HNS incidents.

Interspill 2022 will be one of the first face-to-face events for the oil spill industry since the pandemic, following a coordinated decision by the three triennial oil spill events (IOSC, Spillcon and Interspill) to postpone each of their respective events by one year. Interspill is committed to ensuring the 2022 event is COVID-19 safe and welcoming to exhibitors, conference delegates and visitors alike.

The IOPC Funds are looking forward to this opportunity to reconnect with the response community and to extending awareness of the role of the organisation.

Register to attend the event here and visit us on stand A65, where we will be based alongside the International Group of P&I Clubs.

NEWS REPORTS FROM AROUND THE WORLD

AUSTRALIA: RECONCILIATION WEEK 2022: MAKING CHANGE IN MARINE SAFETY

May 23 - The Torres Strait stretches 150 kilometres from the tip of Cape York Peninsula in North Queensland to the south-west coast of Papua New Guinea (PNG). The region's total population is about 8300, of which more than 6100 are Torres Strait Islander and Aboriginal people.

These beautiful marine environments carry risk. People living in the Torres Strait unfortunately have a much higher chance of being involved in a marine incident than other coastal Australians. They rely on seaborne transport, usually in small open boats across long stretches of open ocean. We work with a number of agencies to increase marine safety in the region.

The theme of National Reconciliation Week this year is 'Be brave. Make change'. We provide subject matter expertise and assistance to Maritime Safety Queensland (MSQ) for the Torres Strait Marine Safety Program (TSMSP). This program makes change through education and training for communities so they can build marine safety skills and understandings. The Torres Strait residents can create safer work practices and safer ways to engage with their marine Country. Since the TSMSP's beginnings in 2006, the number of maritime incidents among Indigenous and Torres Strait communities has fallen from 202 incidents per year in 2006-2007 to 41 in 2020-2021.

To address the risks that come with a life connected to the Torres Strait marine environment, and in response to a high level of search and rescue call outs in the area, in 2006 AMSA began working with MSQ and the Torres Strait Regional Authority (TSRA) to develop the TSMSP. The Queensland Police Service (QPS) and National Maritime Safety Authority (NMSA) of Papua New Guinea became program partners in the following years. AMSA / Read more

CANADA: LITTLE TIME LEFT TO APPLY TO THE OIL SPILL RESPONSE CHALLENGE

May 26 - There is still time to submit your application to the Oil Spill Response Challenge if you haven't already done so. **Applications are due by June 1st, 2022 at 11:59pm PT.** Apply now!

- Challenge Guide: https://impact.canada.ca/challenges/oil-spill-response/applicant-guide
- FAQ: https://impact.canada.ca/challenges/oil-spill-response/faq
- Application Form: https://impact.canada.ca/challenges/oil-spill-response/apply

DENMARK: VIDEO: DIVE INTO YOUR LOCAL AQUATIC ENVIRONMENT



May 24 - Do you know what it is like with the environment in your local stream, lake or fjord? Or how the groundwater is doing where you live? New video guide shows the way to the answers in under 2 minutes. Read more and watch the video

NEWS REPORTS FROM AROUND THE WORLD (CONTINUED)

KUWAIT: MEETING OF THE BOARD OF DIRECTORS OF THE ENVIRONMENTAL PROTECTION FUND 2022

May 24 - The second meeting was held this morning during 2022 of the board of directors of the environmental protection fund, chaired by his excellency Sheikh Abdullah Al-Ahmad Al-Hammoud Al Sabah, Chairman of the board of directors of the environmental protection fund- director general of the general authority for the environment. Kuwait EPA / Continue reading & Watch Video

NIGERIA: UNEP NEWSLETTER - APRIL 2022 EDITION

May 24 – The April edition of the newsletter for the UNEP Support Project to HYPREP has just been published. It has the latest news on the HYREP project, including mission outputs, training and other activities. If you wish to share your feedback on the project or this newsletter, please email us at ogoniland@un.org. To subscribe to our newsletter, click here. To download the newsletter, please click here https://bit.ly/3lxj7BB.

NIGERIA: NIMASA HARPS ON MARINE POLLUTION PREVENTION



Above: L-R: Assistant Director Marine Pollution Control, Federal Ministry of Transportation (FMOT), Olawumi Stella; Deputy Director, FMOT, Julie Abbah; Director, Maritime Safety & Security, FMOT, Babatunde Bambata; Secretary, National Standing Committee for the Implementation of the International Oil Pollution Compensation (IOPC), Aisha Jidda; Deputy Director, Civil Liabilities and Compensation, IOPC, Chinyere Azike and Deputy Director, Ministry of Finance, Budget and National Planning, Zainab Pisagih, during the opening session of the 7th Meeting of the sub-committees of the national standing committee on the implementation of the IOPC funds in Nigeria in Lagos.

May 25 - The Nigerian Maritime Administration and Safety Agency (NIMASA) has restated its commitment to ensuring effective marine pollution prevention and control in order to continue to create an enabling environment for the sector to thrive.

The agency's Director of Marine Environment Management Department, Aishatu Jidda, stated this while speaking at the 7th meeting of the National Standing Committee on International Oil Pollution Compensation (IOPC) Fund implementation in Nigeria. Speaking as the representative of the agency's Director-Genera, she said reiterated NIMASA's commitment to the effective implementation of the IOPC Fund regime by ensuring optimal utilization of the instrument in the country. Ships & Ports / Read more

USA: NOAA - NEW BOARD OF DIRECTORS TO SHARE EXPERTISE AND TACKLE CHALLENGE OF MARINE DEBRIS

April 6 - A new organization is joining the fight to keep our ocean and Great Lakes free of marine debris. NOAA selected the inaugural Board of Directors for the new Marine Debris Foundation, a group that will augment federal efforts to address marine debris.

NEWS REPORTS FROM AROUND THE WORLD (CONTINUED)



Above: Glass bottles, plastic waste, and other debris litter a beach. (NOAA)

A new organization is joining the fight to keep our ocean and Great Lakes free of marine debris. NOAA selected the inaugural Board of Directors for the new Marine Debris Foundation, a group that will augment federal efforts to address marine debris.

Marine debris is one of the most widespread pollution problems facing our waterways, Great Lakes and ocean. Huge amounts of plastics, metals, rubber, paper, textiles, abandoned fishing gear and vessels and other lost or discarded items enter the marine environment every day.

To help solve this problem, the Save Our Seas 2.0 Act of 2020 established the charitable and nonprofit Marine Debris Foundationoffsite link (Foundation) and directed the Under Secretary of Commerce for Oceans and Atmosphere to appoint the Foundation's inaugural governing Board of Directors. NOAA / Read more [Thanks to Larissa Montas, University of Miami]

USA: VIRGINIA - LAWSUIT SAYS ALEXANDRIA IS POLLUTING POTOMAC RIVER WITH CANCER-CAUSING CHEMICALS

May 23 - The city of Alexandria has allowed toxic chemicals to discharge into the Potomac River for more than 45 years, and has not taken action to fix the problem, according to a new lawsuit by the Potomac Riverkeeper Network.

"The city of Alexandria owns this pollution," says Potomac Riverkeeper Dean Naujoks. "We want them to fix the contamination problems that they've created." The source of the problem can be traced back to the mid-19th century. Before the advent of electricity, many communities, including Alexandria, had factories that used coal to produce natural gas — relied on at the time for household energy needs from lighting to heating to cooking. DCist / Read more

USA: MICHIGAN - EVENT CELEBRATES MILESTONE IN MUSKEGON LAKE CLEANUP

May 26 - When the U.S. and Canada amended the Great Lakes Water Quality Agreement in 1987, they singled out 43 sites as Areas of Concern (AOC) for environmental restoration around the Great Lakes region. Fourteen of those sites were in Michigan.

The decades since have seen slow-but-steady success stories. Michigan's AOC program has evolved as a model for large-scale regional ecosystem restoration through community-based planning, contaminated sediment cleanups, and habitat restoration, working with federal and local partners. Three Michigan AOCs – White Lake in Muskegon County, Menominee River in the western Upper Peninsula, and Deer Lake in Marquette County – have been successfully restored and "delisted." Progress continues at the 11 other sites.

NEWS REPORTS FROM AROUND THE WORLD (CONTINUED)

State, federal, and local officials and other stakeholders gathered May 24 at Heritage Landing in Muskegon to celebrate the completion last fall of all management actions required before delisting Muskegon Lake. Michigan Gov. / Read more

NEWS FROM ISCO MEMBERS

Corporate Members of ISCO can submit news about new products and services in the "News from ISCO Members" section of the ISCO Newsletter. This is a free facility for Members. Given that the ISCO Newsletter has a large and highly targeted readership in over 50 countries, it's a cost-effective way to promote your company. If you have some news you would like to share with readers of the ISCO Newsletter, send it to John.McMurtrie@spillcontrol.org

DESMI OPENS 2ND OFFICE IN AFRICA - DESMI NIGERIA IS ESTABLISHED



DESMI Nigeria (Official company name: DESMI Flow Technology W.A. Limited) will be located in Lagos, and the young startup team consists of Office Manager Najeeba Abdulmajeed Owolabi and the sales team Philbertus Mujuni, Collins Ugochukwu Afoaku and Elijah Sobalaje Ogunniran. The sales team has used the last year to support our local customers preparing for the strategic move into one of Africa's largest economies.

"Being here locally, with our own office, is a milestone, and our goals have been set. We have high expectations! We want to be one of the most preferred brands with our flow technology solutions within oil spill response, marine debris trash, engine room pumps for marine and utilities, and much more. An exciting future is ahead of us in Nigeria" concludes Mr. Andrews.

For more information, please contact: Group CEO Henrik Sørensen at hs@desmi.com or +45 4057 8111 Managing Director DESMI Africa, Leslie P. Andrews at lpa@desmi.com or +255 (0) 769756919 Desmi / Read more

LAMOR STRENGTHENS ITS BUSINESS GROWTH CAPABILITIES – ZÄL RUSTOM APPOINTED AS HEAD OF OIL SPILL RESPONSE SERVICES

Lamor reinforces its product management and business growth capabilities. Zäl Rustom has been appointed as Lamor's Head of Oil Spill Response Services as of May 3, 2022.

Zäl has earlier served for example as a Chief Executive Officer at Ambipar Response Ltd and as a Managing Director at Braemar Shipping Services plc. In addition, he has held management positions at Braemar Shipping Services plc and Hi-Bar (UK) Ltd.

"My aim is to build on the exceptional services already provided by Lamor to establish a worldclass response service offering including trusted and reliable environmental response capabilities.



The goal is to provide excellence for our clients in proactive and reactive environmental response services," says Zäl Rustom. <u>Lamor / Read more</u>

CONTRIBUTED ARTICLE: RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS



A COLUMN CREATED BY DR. MERV FINGAS, MEMBER OF ISCO COUNCIL

This is part of a weekly column which provides the references and abstracts of new peer-reviewed scientific publications on oil spills. These references are selected on the basis of those papers that provide new insights into the fate, effects and control of oil spills. Readers may choose to obtain the full publications and to do so, one of three methods is suggested; contact your library, search the internet with the DOI (digital object identifier) provided, or search the internet for the exact title. These are given in the order of likely success in obtaining the article. Merv Fingas, ISCO Colleague.

RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS (CONTINUED)

50. ADVANCEMENT IN OIL FORENSICS THROUGH THE ADDITION OF POLYCYCLIC AROMATIC SULFUR HETEROCYCLES AS BIOMARKERS IN DIAGNOSTIC RATIOS

Filewood, T., Kwok, H., Brunswick, P., Yan, J., Ollinik, J.E., Cote, C., Kim, M., van Aggelen, G., Helbing, C.C., Shang, D. (2022) Journal of Hazardous Materials, 435, art. no. 129027,

DOI: 10.1016/j.jhazmat.2022.129027

ABSTRACT: In current oil spill forensics, diagnostic ratios of hydrocarbon biomarker responses are commonly used to compare oil spill samples to source materials in order to determine the identity of the oil. This well recognized procedure was developed by the European Committee for Standardization (CEN) with corresponding published EN 15522–2 Oil Spill Identification guidelines. However, it is further recognized that weathering can have a negative effect on some of the biomarkers used in the analysis, leading to decreased confidence in the result. In this study, polycyclic aromatic sulfur heterocycles (PASHs) and their alkylated forms (APASHs) were assessed for their potential as additional biomarkers. With the aim of identifying stable PASHs and APASHs useful as weathered oil biomarkers, the superior specificity of gas chromatography with high resolution mass spectrometry was exploited to determine chromatographic peak responses for sixteen petroleum oil samples. Extensive study, involving microcosm extreme weathering and spreadsheet development, led to the identification of 19 new diagnostic ratios based on newly discovered stable PASH and APASH biomarkers. Application of the extended diagnostic ratio suite showed high potential to improve the forensic attribution of post-spill weathered oil back to its original source.

51. DYNAMICS OF ICE MELTING BY AN IMMISCIBLE LIQUID LAYER HEATED FROM ABOVE

Farmahini Farahani, H., Hayashi, T., Sakaue, H., Rangwala, A.S. (2022) Experimental Thermal and Fluid Science, 135, art. no. 110641,

DOI: 10.1016/j.expthermflusci.2022.110641

ABSTRACT: A series of experiments were conducted to investigate the melting of ice adjacent to a water-immiscible liquid layer (n-dodecane) exposed to radiation from above. The experimental setup consisted of a borosilicate container containing an ice wall and a layer of n-dodecane heated from above. In addition to tracking the movement of the melt front, Particle Image Velocimetry (PIV) and Background Oriented Schlieren (BOS) measurements were conducted on the liquid-phase. Two distinct melting regimes were found to dominate the melting process. First was the uniform melting across the contact area with the immiscible liquid layer for low radiation levels (~1 kW/m2). Second was the lateral intrusion regime, where a depression near free surface of the liquid forms in ice and grows laterally for radiation level greater than ~ 1 kW/m2. The ice surface remained flat and smooth in uniform melting regime, whereas in the lateral intrusion regime a series of rivulets were formed that carved valleys on the ice. PIV measurements showed a surface flow toward the ice for all heat flux levels caused by surface-tension forces. Increase of the heat flux levels caused a transition to multi-roll structure in the flow field. This multi-roll structure, which is accompanied by a recirculation zone near the ice, increased heat transfer near the surface of the liquid causing lateral intrusion regime. BOS measurements indicated presence of density gradients below the free surface of n-dodecane and in regions near the ice that are caused by local small-scale temperature gradients.

The current experiments were conducted to explore the melting dynamics and to shed light on the processes that influence the ice melting. Implications of such mechanisms in a real-life scenario, i.e. oil spill in ice-infested waters, needs to be explored further by using more liquids and improved accuracy of the diagnostic techniques.

52. EXPOSURE PATTERNS AMONG COAST GUARD RESPONDERS TO THE DEEPWATER HORIZON OIL SPILL: A LATENT CLASS ANALYSIS

Gribble, M.O., Keshav, T., Denic-Roberts, H., Engel, L.S., Rusiecki, J.A. (2022)

Environmental Epidemiology, 6 (3), p. E211.

DOI: 10.1097/EE9.0000000000000211

ABSTRACT: Background: The Deepwater Horizon Oil Spill was an environmental crisis for which multiple groups, including the United States Coast Guard (USCG), provided emergency response services. A cohort of 5,665 USCG oil spill responders completed postdeployment surveys eliciting information on a variety of topics, including oil spill-related exposures and experiences. Our objective was to determine the most common exposure patterns among USCG responders. Methods: We used latent class analysis based on six indicator variables reflecting different aspects of the responders' experiences: exposure to oil, exposure to engine exhaust fumes or carbon monoxide, hand sanitizer use, sunblock use, mosquito bites, and level of anxiety.

We validated our interpretation of these latent classes using ancillary variables. Results: The model distinguished four distinct exposure profiles, which we interpreted as "low overall exposure" (prevalence estimate = 0.18), "low crude oil/exhaust and moderate time outdoors/anxiety (prevalence estimate = 0.18), "high crude oil/exhaust and moderate time outdoors/anxiety" (prevalence estimate = 0.25), and "high overall exposure" (prevalence estimate = 0.38).

The validation analysis was consistent with our interpretation of the latent classes. Conclusions: The exposure patterns identified in this analysis can help inform future studies of the health impacts of exposure mixtures among USCG oil spill responders. © 2022 Wolters Kluwer Health. All rights reserved.

RECENT INTERESTING PEER-REVIEWED OIL SPILL PUBLICATIONS (CONTINUED)

53. THE EFFECTS OF DISSOLVED PETROLEUM HYDROCARBONS ON BENTHIC ORGANISMS: CHIRONOMIDS AND AMPHIPODS

Indiketi, N., Grenon, M.-C., Groleau, P.É., Veilleux, É., Triffault-Bouchet, G., Couture, P. (2022) Ecotoxicology and environmental safety, 237, p. 113554.

DOI: 10.1016/j.ecoenv.2022.113554

ABSTRACT: The oil sands industry in Canada, produces heavy unconventional oils, diluted for transport and called diluted bitumen. However, despite advances in our knowledge of the ecotoxicological risk that these products represent, their effects on benthic organisms following a spill are still largely unknown. In order to fill these gaps, this study aims to determine the lethal and sublethal effects of two diluted bitumens (Bluesky and Cold Lake) and one conventional oil (Lloydminster) for two freshwater benthic invertebrates: Chironomus riparius and Hyalella azteca. The objective of this study is to assess the toxicity of dissolved hydrocarbons, resulting from the physical dispersion of oil, immediately after a spill on the benthic invertebrates. To this end, organisms were exposed for 7 days for chironomids and 14 days for amphipods to a fraction containing soluble hydrocarbons (WAF: water accommodated fraction; 10 g/L, 18 h of agitation, followed by 6 h of sedimentation) with natural or artificial sediment. After exposure, the effects of hydrocarbons were determined using size, mortality, and antioxidant capacities. Dissolved hydrocarbons induced mortality for both species, but these hydrocarbons disappeared very quickly from the water column, regardless of the oil type. The amphipods were sensitive to both types of oil while the chironomids were only sensitive to diluted bitumens. The presence of a natural sediment seems to provide a protective role against dissolved hydrocarbons. The antioxidant enzymes measured (CAT, SOD and GPx) do not appear to be relevant biomarkers for the exposure of these organisms to diluted bitumen. Crown Copyright © 2022. Published by Elsevier Inc. All rights reserved.

54. OIL SPILLS IN THE BARENTS SEA: THE RESULTS OF MULTIYEAR MONITORING WITH SYNTHETIC APERTURE RADAR

Ivanov, A.Y., Kucheiko, A.Y., Ivonin, D.V., Filimonova, N.A., Terleeva, N.V., Evtushenko, N.V. (2022) Marine Pollution Bulletin, 179, art. no. 113677,

DOI: 10.1016/j.marpolbul.2022.113677

ABSTRACT: This paper presents the results of multiyear satellite monitoring of oil pollution in the Barents Sea conducted in 2015–2020. Monitoring was based on synthetic aperture radar (SAR) images from the European Space Agency's Sentinel-1A and Sentinel-1B satellites. During monitoring, more than 26,000 SAR images were collected and analyzed for oil pollution in the form of oil spills. A geographic information system (GIS) and a conventional interactive technique were used to efficiently analyze a substantial number of SAR images covering the Barents Sea. Our approach employed online geoportal based on GIS technology with a large volume of additional information (oceanographic, physical-geographical, and industrial) about the marine basin, including those for offshore oil and gas infrastructure. As a result, multiyear oil spill distribution map was generated and analyzed, and the most oil-polluted regions of the sea and natural seeps were identified. The analysis focused on the general characteristics of the spatial and temporal distribution and the main sources of oil pollution of the Barents Sea. Sources of oil spills with areas ranging from 0.5 to 90 km2 were interpreted based on data from the automatic ship identification systems used to monitor shipping and fishing. Based on the monitoring results, the general level of oil pollution in the Barents Sea is established, statistics were calculated, and risk zones identified. The most polluted marine areas are in the southern part of the sea, where maritime shipping continuous; moderate levels of pollution appear in the fishing zones in the central part of the sea.

Finally, the study results show that overall oil pollution in the Barents Sea is still relatively low compared to other marginal and inland seas of Europe.

TRAINING COURSES

USEFUL LINKS

- INTERNATIONAL IMO E-LEARNING PLATFORM e-learning platform
- AUSTRALIA AMOSC https://amosc.com.au/training/
- AUSTRALIA & NEW ZEALAND ALGA https://landandgroundwater.com
- EUROPE EMSA Academy 2022. Courses Catalogue
- FRANCE CEDRE Click on these links <u>training catalogue</u> and <u>2022 calendar</u>.
- UK & WORLDWIDE OIL SPILL RESPONSE LTD. https://www.oilspillresponse.com/training/courses/
- UK & WORLDWIDE BRIGGS ENVIRONMENTAL SERVICES LTD. https://www.briggsmarine.com/services/training/
- UK NCEC HAZMAT ACADEMY More info
- USA TEXAS A&M UNIVERSITY NATIONAL SPILL CONTROL SCHOOL https://www.tamucc.edu/research/nscs/
- USA MPC, DETROIT https://marinepollutioncontrol.com/services/training-and-compliance
- USA ALLIANCE OF HAZARDOUS MATERIALS PROFESSIONALS https://www.ahmpnet.org/events/event-list.asp

Members who would like to be listed here, please contact your editor – john.mcmurtrie@spillcontrol.org

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Please advise the Editor if any of the entries require correction or updating. If you are holding an event you would like to be featured here, please send details to John.mcmurtrie@spillcontrol.org

Newly added to the Upcoming Events page - Interspill Science Workshops, at Interspill on June 21 to 23; Recently added to the Upcoming Events page - UN Stockholm +50 Meeting, 2nd to 3rd June, 2022, Stockholm, Sweden;

UPCOMING WEBINARS & PODCASTS

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Newly added to the Upcoming Webinars Page - ALGA: Dealing with Weathered Petroleum, 9th June 2022, 12-1 pm AEST;

Recently added to the Upcoming Webinars Page - ExxonMobil Oil Spill Knowledge Transfer Webinar No.9: Mr David Dickins (D.F. Dickins Associates) will share his extensive experience on Arctic oil spill response, 9th June 2022 10.00 to 11.15 am Houston Time; Interspill Inform Clean Seas Webibar Series - Marine Debris and Plastic Pollution 1400hrs (BST) 31 May; Emerging Pollutants 1400hrs (BST) 8 June; PEMSEA Ocean & Climate Dialogue, 8th June, 9am to 3pm UTC+8.

MESSAGES FROM EVENT ORGANISERS

PAPER SUBMISSION DEADLINE DATES

CANADA: INTERNATIONAL OIL SPILL SCIENCE CONFERENCE - June 17, 2022. About IOSSC 2022 Call for Abstracts Registration

USA: CLEAN GULF CONFERENCE & EXHIBITION – BOOK YOUR EXHIBIT SPACE AT BEFORE WE SELL OUT THE FLOOR! ONLY 25 SPACES LEFT.

<u>View Exhibition Contract</u> <u>View Conference Sessions</u> <u>Register for Clean Gulf</u>

EUROPE: INTERSPILL – SCIENCE WORKSHOPS

INTERSPILL 2022 will once again feature science workshops jointly organised by Cedre and ITOPF. These will cover key topical issues relating to both present and future challenges in spill and pollution response. These workshops take the form of four 1-hour sessions, each comprising three presentations by specialists followed by 30 minutes of discussions with the audience to explore these issues in depth.

The speakers will be from both academia and industry in order to offer as broad a perspective as possible and an international viewpoint. The discussion sessions will be an opportunity for you to express your point of view and contribute to the debates, gain insight into the latest advances on topics presented by experts and potentially expand your network.

The provisional programme is below:

- 21 June 1330-1500 Trend in propulsion, led by Cedre.
- 22 June 1100-1230 Atmospheric pollution from chemical spills, led by Cedre.
- 22 June 1630-1800 The issue of plastic pollution, led by ITOPF.
- 23 June 1100-1230 Sensitive tropical environments; led by ITOPF

For more info please visit https://spillcontrol.org/upcoming-events/

ON WATER DEMONSTRATION - As in 2015, Spill Response Holland, SRGH, are organising an onwater demonstration on the River Amstel on the Monday evening. All Exhibitors are invited to take part, and should contact SRGH directly to liaise at info@srgh.nl https://www.interspill.org/about-interspill/on-water-demonstration/

MESSAGES FROM EVENT ORGANISERS (CONTINUED)

USA: FULL CONFERENCE AGENDA NOW AVAILABLE FOR CLEAN PACIFIC 2022

View full conference programme Registration

CANADA: 44th AMOP TECHNICAL SEMINAR ON ENVIRONMENTAL CONTAMINATION AND RESPONSE

This year's AMOP Technical Seminar on Environmental Contamination and will take place virtually from June 7 to 9, 2022. There will be no registration fees, but will have limited availability. Register before August 31, 2022 to pay our early bird rates.

https://events.myconferencesuite.com/AMOP_44th/reg/landing or https://www.canada.ca/en/environment-climate-change/services/science-technology/arctic-marine-oilspill-program/registration-form.html

<u>Call for abstracts</u> <u>Register now Speakers Book hotel</u> <u>Near attractions</u>

CONTRACTS, TENDERS AND BUSINESS OPPORTUNITIES

INTERNATIONAL OPEN TENDER NOTIFICATION SERVICE

This is a subscription service. Have a look to see examples of open tenders.

OTHER OPPORTUNITIES: USA & EUROPE

US Government solicitations are frequently posted in Technology Innovation News Survey https://clu-in.org/products/tins/ US EPA Tech Direct https://clu-in.org/products/tins/ US EPA Tech Direct https://clu-in.org/federal-Contract-Opportunities European Maritime Safety Agency invitations to tender are often posted in The EMSA Newsletter. (Look in "Links for other publications" for the current issue of this publication)

LINKS FOR DOWNLOADING AND READING OTHER PUBLICATIONS

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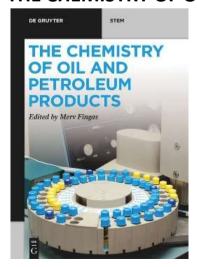
As a service to its Menbers ISCO provides a listing of publications that may be of interest to our community. This page provides details and links for downloading more than 40 publications most of which can be accessed at no cost.

This page is frequently updated. ISCO depends on regular receipt of updated URL links for listed publications. If these are not received, relevant entries will be discontinued. Publishers are kindly requested to advise the editor john.mcmurtrie@spillcontrol.org if any links are not up-to-date.

Readers wishing to recommend the addition of additional publications should contact the editor.

NEW PUBLICATIONS

THE CHEMISTRY OF OIL AND PETROLEUM PRODUCTS



A NEW BOOK EDITED BY: MERV FINGAS

Info - https://www.degruyter.com/document/doi/10.1515/9783110694529/html

This book is devoted to the chemistry of oil and petroleum products and covers the broad range of topics from heavy fuel oils, crude oils and (diluted) bitumen to today's research on asphaltenes.

Recent methods are summarized and the large new groups of chemicals found in oils are identified as well as described.

The work points the way for a more complete understanding of the composition of petroleum. 686 pages

NEW PUBLICATIONS (CONTINUED)

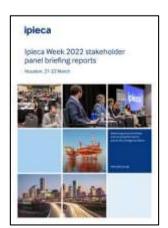
HIGHLIGHTS INCLUDE:

- An update on oil fingerprinting
- New data using Fourier transform mass spectrometry, forensic tools for naphthenic acid fraction compounds in oil sand environmental samples
- Data on vanadium and nickel content changes in the resins of heavy oils, characteristics of their structural and group composition, and the content of heteroatomic (N, S, O) compounds
- Study of asphaltenes using direct molecular imaging employing atomic force microscopy (AFM) and scanning tunneling microscopy (STM) confirming early findings of the dominance of the 'island' molecular structure
- An update on the Yen-Mullins model of asphaltenes in reservoirs giving the requisite solution to the asphaltene particle size, thus resolving the gravity term for thermodynamic modeling. A modified polymer solution theory, the Flory-Huggins-Zuo (FHZ) EoS, is provided to model asphaltene gradients in reservoirs.
- A suite of oils from the Tarim Basin, Qaidam Basin, Ordos Basin, and Liaohe Basin, China is characterized geochemically to clarify factors that can affect the concentrations and distributions of pyrrolic nitrogen compounds (PNCs) in crude oils.
- An update on biomarkers in crude oils
- Updates on mass spectrometry techniques applicable to crude oils

CONTENTS

- 1 Introduction to oil chemistry Merv Fingas
- 2 Chemical fingerprints and chromatographic analysis of crude oils and petroleum products Chun Yang, Zhendi Wang, Zeyu Yang, Bruce Hollebone, Ben Fieldhouse, Patrick Lambert and Merv Fingas
- 3 Advances in Fourier transform mass spectrometry forensic tools for naphthenic acid fraction compounds in oil sand environmental samples and crude oil John V. Headley, Ian J. Vander Meulen, Rory P. Downham, Latifa Alostad, Kerry M. Peru, Dena W. McMartin and Mark P. Barrow
- 4 Heavy oil resin composition and their influence on asphaltene stability M. R. Yakubov, G. R. Abilova, S. G. Yakubova, D. V. Milordov and N. A. Mironov
- 5 Asphaltenes: structures and applications Yunlong Zhang, Bruno Schuler, Fang Liu, Yosadara Ruiz-Morales, Leo Gross, Andrew E. Pomerantz, Vincent Pauchard, Sanjoy Banejee and Oliver C. Mullins
- 6 Asphaltene equation of state and oilfield reservoirs Oliver C. Mullins, Jesus A Cañas, Soraya S. Betancourt and Andrew E. Pomerantz
- 7 Molecular distributions and geochemical implications of pyrrolic nitrogen compounds in crude oils Chuanyuan Wang, Shijie He and Zixuan Zhang
- 8 Analysis of petroleum-related samples by soft ionization/high-resolution mass spectrometry Roman S. Borisov and Vladimir G. Zaikin
- 9 Non-combustion applications of petroleum chemistry J. R. Radović and R. C. Silva
- 10 Biomarkers in crude oils R. Paul Philp and Gregory T. Connock
- 11 Photooxidation of crude oil: formation, characterization, and fate of oil photoproducts in the environment Christoph Aeppli
- 12 Molecular structure characterization of crude oil and its products by mass spectrometry Thamina Acter, Nizam Uddin and Sunghwan Kim
- 13 The distillation precipitation fractionation mass spectrometry (DPF-MS) method for molecular profiling of crude oil Kawthar Z. Alzarieni and Hilkka I. Kenttämaa
- 14 Hyphenated gas chromatography and mass spectrometry techniques for the analysis of crude oil and petroleum products Roman S. Borisov and Vladimir G. Zaikin

IPIECA WEEK 2022 STAKEHOLDER PANEL BRIEFING REPORTS



From 21-25 March in Houston, Ipieca held its flagship in-person event (Ipieca Week) bringing together nearly 200 Ipieca member company representatives with 11 senior leaders from a range of IGO, NGO, civil society and academic institutes.

Ipieca held three stakeholder panel sessions with key stakeholders from outside the industry sharing their perspectives on the challenges and opportunities for the oil, gas and alternative energy sector, as well as the role of Ipieca, with regard to:

Advancing sustainability across the energy transition + ESG and reporting transparency + Just transition

This report provides the key messages from the sessions. **Download**

NEW PUBLICATIONS (CONTINUED)

SHIP TO SHIP TRANSFER

The Oil Companies International Marine Forum (OCIMF) has published a new study analysing ship-to-ship transfers under varying environmental conditions.

Ship-to-ship transfer operations take place across different geographies and under varying environmental conditions, adding to the complexity and risks associated with such transfers. Despite best efforts, mooring line failures are still a leading cause of incidents, potentially causing harm to people and the environment thus jeopardising the integrity of such transfers. This information paper, Mooring Load Analysis during Ship to Ship Transfer Operations, aims to support relevant stakeholders in making their own assessments to determine suitable weather criteria and ascertain an appropriate weather window for STS operations.

The current study used advanced mooring line load simulation technology for enhanced assessment of mooring line loads under varying environmental conditions for a variety of ship-type combinations, including LPG and LNG carriers.

The study is available as a free to download information paper on OCIMF's website <u>here</u>. [Thanks to Sandra Speares, The Maritime Advocate. contactus@themaritimeadvocate.com]

LATEST NEWSLETTER FROM MEDITERRANEAN OIL INDUSTRY GROUP (MOIG)

MOIG Newsletter Issue 051. It includes the following articles

- Regional Workshop on the Role of Volunteers in Pollution Response Along the Coast and in the Shoreline (POSOW)
- Mediterranean Strategy for the Prevention of, Preparedness, and Response to Marine Pollution from Ships (2022-2031)
- Participation to Trades Forum
- New Update on MOIG Activities 2022 in the UIA's Yearbook
- Oil Spill Response Equipment Database

Link to download and read Issue 051: http://medoilgroup.org/index.php/publications

JOB VACANCIES



TECHNICAL OFFICER

MARINE ENVIRONMENT DIVISION

The Technical Officer will serve as the institutional focal point for all policy and operational matters related to oil/HNS pollution preparedness and response (OPRC/HNS). In this capacity, the Technical Officer will be responsible for oversight and management of joint oil pollution preparedness projects with the petroleum industry (GI), to implement an array of technical capacity building activities worldwide, and to provide concrete technical guidance and assistance in the event of major pollution incidents.

For more information please click on https://spillcontrol.org/job-vacancies/



The International Maritime Organization (IMO) has published three vacancy positions located within REMPEC, based in Floriana, Malta:

For more information please click on https://spillcontrol.org/job-vacancies/

INCIDENT REPORTS

RUSSIA: TANKER STRUCK BERTHED CARGO SHIP, OIL LEAK, VLADIVOSTOK

May 22 - Water supply tanker LOTOS on May 22 struck berthed general cargo ship VYACHESLAV ANISIMOV in Ulysses Bay, Port Vladivostok, Russia. Tanker was maneuvering to moor. VYACHESLAV ANISIMOV sustained hull breach or breaches in fuel tank area, diesel oil leak reported. Maritime Bulletin / Read more

SOUTH AFRICA: RESPONSE UNITS ON SITE AFTER OIL SPILL IN ALGOA BAY

May 24 - Cape Town – A containment and clean-up operation is under way in Algoa Bay, Eastern Cape, after an oil spill on Monday. According to a statement by the South African Maritime Safety Authority (Samsa), Transnet National Ports Authority (TNPA) and the Department of Forestry, Fisheries and Environment (DFFE), the oil spill occurred around midday during a ship-to-ship transfer of oil. IOL / Read more

May 25 - Ship-to-ship oil transfers remain suspended in Algoa Bay, South Africa; as IMOrg ratchets up oil spill incident management: SAMSA - Off shore bunkering services, otherwise known as ship-to-ship oil/fuel transfers remain suspended in Algoa Bay near Ngqurha (a.k.a Port Elizabeth) on South Africa's eastern seaboard as a national incident management structure strengthens its grip on containment measures of an oil spill at sea that occurred at midday on Monday. SAMSA / Read more

May 26 - Oil spill: Clean up operations continue in Algoa Bay. According to a statement by the South African Maritime Safety Authority (Samsa), Transnet National Ports Authority (TNPA) and the Department of Forestry, Fisheries and Environment (DFFE), five oil recovery boats are being used to collect the oil. By Tuesday afternoon, all visible heavy oil had been collected while large patches of light oil sheen were spotted. IOL / Read more

LIBERIA: EPA PROBES BEA MOUNTAIN FOR 'CONTAMINATING' WATER SOURCE

May 25 - The Environmental Protection Agency of Liberia has commissioned an investigation into the alleged spillage of "toxic chemicals" in the Mafa River, in Grand Cape Mount by Bea Mountain, a Turkish gold mining company.

The spill, according to the report, has resulted in the deaths of some aquatic species, which could be seen lying along the Mafa river bank and surrounding bushes in Kinjor, the seat of Bea Mountain operations. The Mafa river serves about 10 communities that depend on it for drinking, cooking, fishing, and other domestic purposes. There are hundreds of residents who live along the banks of the river — using it as a source of livelihood. Daily Observer / Read more

May 26 - EPA Assures the Senate of Government's Intervention in River Poisoning in Cape Mount County - The Executive Director of the Environmental Protection Agency (EPA) says the Agency has dispatched a 15-man delegation comprising scientists and specialists to Grand Cape Mount County with a mandate to investigate the situation of water poisoning. AllAfrica / Read more

UAE: BEACHES AFFECTED BY OIL SPILLS TEMPORARILY CLOSED

May 25 - Fujairah Environment authorities have said fishermen had informed them of an oil spill that was affecting certain beaches over the weekend. Sharjah authorities were then notified of the same. An official said that these oil spills can contain a variety of materials, including crude oil from tankers, refined oil products such as gasoline and diesel, and any kind of petroleum. Khaleej Times / Read more

SINGAPORE STRAIT: CONTAINER BARGE HEAVY LIST, 12 CONTAINERS LOST

May 26 - Container barge on tow of tug MEGA DAYA 43 suffered containers shift in Singapore Strait off Karimun, Riau Archipelago, Indonesia, early in the morning, and developed heavy list. Some 12 containers were lost overboard. Maritime Bulletin / Read more Video: http://www.maritimebulletin.net/2022/05/26/container-barge-heavy-list-12-containers-lost-singapore-strait-video/

USA: PENNSYLVANIA - TRAIN CRASH SPILLS OIL PRODUCT ALONG ALLEGHENY RIVER

May 27 - A train crash just outside of Pittsburgh has created a spill of petroleum distillates along the Allegheny River Seventeen cars in total were derailed in Harmar Township, near the city's North Side, with nine ending up in a creek just outside the river. Independent / Read more

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