



ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

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International news

NEW EU DIRECTIVE ADDRESSES OFFSHORE OIL & GAS OPERATIONS IMPACTS ON WILDLIFE



July 12 - On 28 June 2013, the European Union published a new Directive on the safety of offshore oil and gas operations in its Official Journal. The Directive represents a significant milestone as this is the first time that oiled wildlife response is specifically mentioned within European legislation. Sea Alarm welcomes the inclusion of protection of oiled wildlife within the scope of this Directive.

The Directive requires Member States to prepare external emergency response plans covering all offshore oil and gas installations or connected infrastructure, as well as potentially affected areas within their jurisdiction (Art.29). According to the Directive those emergency response plans must include: "arrangements for the mitigation of the negative impacts on wildlife both onshore and offshore including the situations where oiled animals reach shore earlier than the actual spill" (Annex VII (h))."

The overall objective of the new legislation is to reduce the occurrence of major accidents relating to offshore oil and gas operations and to limit their consequences, thus contributing to the protection of the marine environment and wildlife from pollution.

An oil spill in or near one of the vulnerable marine or coastal habitats of the European Seas could have serious environmental impacts, with potentially devastating effects on marine wildlife. In a worst-case scenario, hundreds to thousands of animals may become oiled, with potentially lethal consequences if nothing is done to mitigate the effects.

If implemented as intended across the European Union, the new legislation would ensure that Member States cooperate with all concerned stakeholders to ensure that wildlife response plans are developed and put in place. The Directive will help reinforce the importance of the support that Sea Alarm provides to European countries and to the work of the European Regional Agreements, such as HELCOM.

The full text of the Directive of the European Parliament and of the Council on safety of offshore oil and gas operation is available online. [Sea Alarm](#)

Incident reports

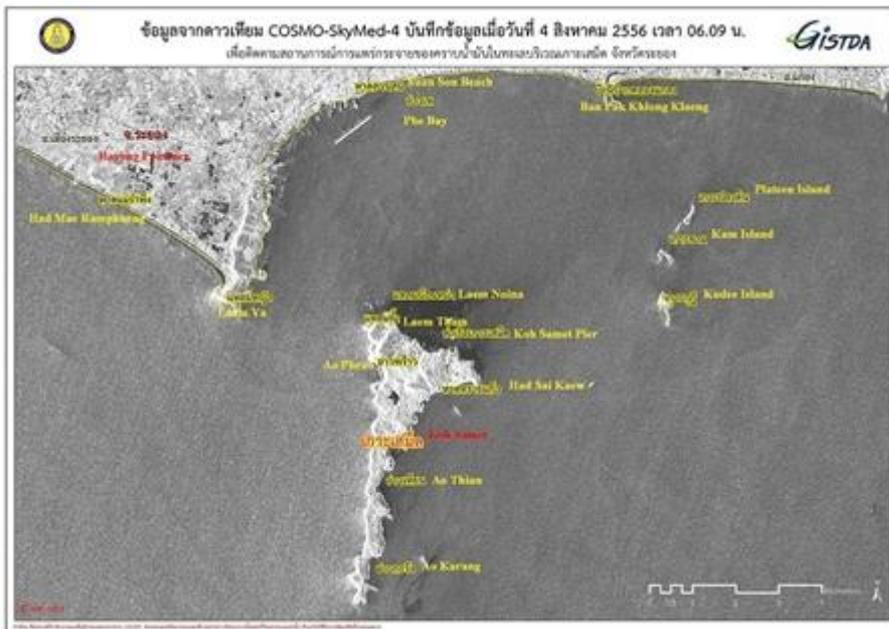
PHILIPPINES: LARGE OIL SPILL SPREADS NEAR SHORE IN MANILA BAY, FISHING BANNED

August 9 - A large oil spill from an underwater pipe has contaminated waters in Manila Bay near the Philippine capital and prompted authorities on Friday to ban fishing.

The coast guard said about 500,000 liters (132,000 gallons) of diesel fuel formed a red slick stretching some 300 square kilometers (116 square miles) near four coastal towns in Cavite province.

The leak apparently originated from an underwater pipe owned by oil company Petron Corp., or from a pipeline that was connected from the pipe to a tanker that unloaded the diesel at a Cavite terminal on Thursday, Commodore Joel Garcia said. *The Republic* [Read more](#) [Report in Manila Standard Today](#) [Report in Terra Daily](#)

THAILAND: OIL SPILL SITUATION UPDATE OF 5 AUGUST 2013



August 6 - Satellite image by Geo-Informatics and Space Technology Development Agency (GISTDA), as of 4 August 2013, 0609 hrs

Further improvement has been reported in the dispersion and dissipation of the oil spill off Samet Island, Thailand, as clearly indicated in the "COSMO-SkyMed-4" Satellite image as of 0609 hrs, August 4th, 2013. The image shows the presence of only small quantities of oil film near the northern coastal area of the island. This shows that the oil spill has almost totally cleared up.

Sample tests of water, sand, air, marine life and corals in the sea off Rayong have not indicated any dangerous chemical residues. Nevertheless, the environment and ecological system in the area of oil slick will be monitored for at least 12 months, according to a minister. Vichet Kasemthongsri, Natural Resources and

Environment Minister, who made a personal inspection at Phrao Bay on Samet Island yesterday (04 Aug 2013). *Pattaya Mail* [Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

BAHRAIN: OIL SPILL SPARKS HIGH ALERT

August 5 - Bahrain is on high alert following a massive oil spill in the Arabian Gulf, which was deliberately caused by an Indian ship. *Desh Shanti* was caught dumping oil near Iranian waters on Tuesday after ignoring official communications from concerned authorities.

The spill caused an oil slick of around 10 miles, according to the Marine Emergency Mutual Aid Centre (MEMAC).

Bahrain is monitoring the situation after it received a satellite view of the oil slick and could increase safety measures depending on an investigation, said Supreme Council for Environment pollution control from the source unit head Hanan Haidar. *Gulf Daily News* [Read more](#)

YEMEN: OIL PIPELINE HIT FOR SECOND TIME IN 10 DAYS

August 4 - Yemeni tribesmen blew up the main export pipeline linking eastern oilfields to the Red Sea coast, halting the flow of oil, state media reported on Sunday.

The saboteurs attacked a section of pipeline in Wadi Abida, close to the oilfields in the eastern province of Marib, the state Saba news agency quoted an official it did not identify as saying.

The attack interrupted the flow of oil along the 320 kilometre (200 mile) pipeline that links the Safer oilfields to the export terminal in Hodeida province on the coast. *Fox News* [Read more](#)

Incident reports (continued)

SENEGAL: BOAT RUNS AGROUND OFF COAST OF SENEGALESE CAPITAL, SPILLING DIESEL FUEL INTO SEA

August 5 -A boat that ran aground off the coast of Senegal's capital is now leaking diesel fuel into the ocean near some scenic islands.

Senegalese Environment Minister Haidar El Ali said Monday the accident took place Friday near the Madeleine Islands. The minister said authorities were trying to do all that they can to contain the spill near the islands, whose waters are home to a diverse array of fish. *The Washington Post* [Read more](#)

Senegal fears oil spill disaster from sinking tanker

August 5 - Senegalese authorities have expressed fear over an imminent environmental disaster likely to be caused by a Spanish oil tanker that is sinking off the coast of Dakar, sources said Sunday. The Environment and Maritime Affairs ministers who visited the site of the listing tanker on Sunday said the beaches and the rich fishing fields off the coast of Dakar would be devastated when and if the fuel eventually spills from the vessel.

"Senegal does not have the requisite logistics to respond effectively to such an imminent catastrophe," said Ali El Haidar, the environment minister.

Maritime traffic agents say that the vessel - Almadraba Uno - is slanted but are not sure anything can be done to prevent an oil spill or the vessel sinking into the ocean. The crew of the Spanish tanker radioed for rescue late Saturday night apparently after hitting a rock. The vessel is carrying an estimated 45,000 tonnes of petroleum. *Africa Review* [Read more](#)

CANADA: CNRL CREWS WORK TO CLEAN UP BITUMEN LEAK ON WETLANDS



Photo: Ryan Cameron, in charge of the cleanup, points to the bitumen emulsion seeping up through this fissure at Canadian Natural Resources Limited (CNRL) Primrose oilsand project sites north of Cold Lake, August 8, 2013. A total of four sites have this seepage occurring and to date 7300 barrels have been collected from 13.5 hectares. Photograph by: Ed Kaiser, Edmonton Journal

August 9 - On its East Primrose site, CNRL crews cleared trees, hauled out oily peat from the muskeg and worked to locate the long, narrow fissures Thursday that have allowed bitumen to leak to the surface from deep underground.

So far, 7,300 barrels of bitumen have been removed from four spill sites on the company's in situ oilsands project in the Cold Lake Air Weapons range, 300 kilometres northeast of Edmonton. That includes bitumen leaking into a watery marshland. *The Edmonton Journal* [Read more](#)

USA: 100 HOMES CLEARED BY LA. CHEMICAL SPILL

Photo: ASSOCIATED PRESS Louisiana Gov. Bobby Jindal declared a state of emergency yesterday in the wake of a train derailment west of Baton Rouge on Sunday.

August 6 - Crews began replacing about 1,800 feet of track yesterday around the site of a derailed train that leaked a corrosive chemical and forced the evacuation of about 100 south Louisiana homes.

The Union Pacific train went off the tracks Sunday near Lawtell, about 60 miles west of Baton Rouge. Company spokeswoman Raquel Espinoza said the cause is under investigation. "That section of track had just been inspected about three hours before the accident," she said. "There's no timeline on when the area will be completely clear. We're just taking it one step at a time so we can clear the scene in the safest manner possible."

Louisiana Gov. Bobby Jindal declared a state of emergency yesterday. Espinoza said one railcar leaked sodium hydroxide, which can cause injuries or even death if it's inhaled or touches the skin. Another spilled lube oil, and a third leaked dodecanol, a chemical used as a food additive. *Philly.com* [Read more](#)



Incident reports (continued)

JAPAN: FUKUSHIMA RADIOACTIVE WATER LEAK AN 'EMERGENCY'

August 5 - Japan's nuclear watchdog has said the crippled Fukushima nuclear plant is facing a new "emergency" caused by a build-up of radioactive groundwater. A barrier built to contain the water has already been breached, the Nuclear Regulatory Authority warned. This means the amount of contaminated water seeping into the Pacific Ocean could accelerate rapidly, it said. BBC News [Read more](#)

Other news

CYPRUS: WORST OF OIL SPILL COULD HAVE BEEN AVOIDED



August 7 - The effects of the oil spill in the sea off the Karpas peninsula last month could have been limited had the Turkish Cypriots accepted immediate help from Cyprus' relevant departments, according to a report by the University of Cyprus.

The University's oceanography department used the Mediterranean Decision Support System for Marine Safety (MEDESS-4MS) in cooperation with the ports authority, fisheries department and the department for marine research to formulate a prediction of how it could have unfolded.

MEDESS-4MS is dedicated to the strengthening of maritime safety by mitigating the risks and impacts associated to oil spills. The research clearly showed that if The Turkish Cypriot side had accepted the help initially offered, the majority of the oil spill could have been confined if it had been dealt with within the 12-18 hours. *Cyprus Mail* [Read more](#)

USA: HURRICANE ISAAC OIL AND CHEMICAL RELEASES EXAMINED BY ENVIRONMENTAL GROUPS

August 6 - In the wake of Hurricane Isaac last August, at least 341,000 gallons of oil, chemicals and untreated waste-water were released by area oil, coal, gas and petrochemical facilities, according to a report released Tuesday.

The report by the Gulf Monitoring Consortium, which examined National Response Center and Louisiana Department of Environmental Quality data, stated that facilities also released about 192 tons of gasses and other materials – or about 355,000 pounds. The report also notes that oil from the 2010 BP Deepwater Horizon continued to wash ashore as a result of the hurricane.

With the peak of the 2013 hurricane season upon us, the consortium is asking government regulatory agencies and emergency responders to monitor these facilities more closely and that the facilities address their vulnerabilities before potential storm events. *The Times Picayune* [Read more](#)

USA: BP CITES NEW FRAUD ALLEGATIONS IN SPILL SETTLEMENT

August 6 - BP said Monday that it has uncovered new allegations of fraud and conflicts of interest inside the settlement program that has awarded billions of dollars to Gulf Coast businesses and residents for damage from the company's 2010 oil spill in the Gulf of Mexico. BP attorneys outlined the allegations in a court filing, which asks a federal judge to temporarily suspend settlement payments while former FBI Director Louis Freeh leads an independent investigation of the court-supervised settlement program.

U.S. District Judge Carl Barbier rejected the same request last month, but BP said it only recently learned of new evidence of "more widespread and potentially systemic improprieties" in the program. *CBS42.com* [Read more](#)

BP must pay court administrator \$130M

August 7 - A federal magistrate on Wednesday ordered BP to pay more than \$130 million in fees to the court-supervised administrator of its multibillion-dollar settlement with Gulf Coast businesses and residents after the company's 2010 oil spill.

The ruling comes as BP tries to temporarily block claims payments while former FBI Director Louis Freeh investigates allegations of misconduct by an attorney who worked on the settlement program. BP also has complained of broader problems in the program run by court-appointed claims administrator Patrick Juneau. *TimesUnion.com* [Read more](#)

USA: SHELL'S SPILL RESPONSE PLAN FOR ARCTIC DRILLING MEETS ENVIRONMENTAL LAWS, SAYS JUDGE

August 7 - A U.S. district court judge has ruled that Shell's oil spill response plan for their Arctic drilling program in Alaska does not violate environmental laws.

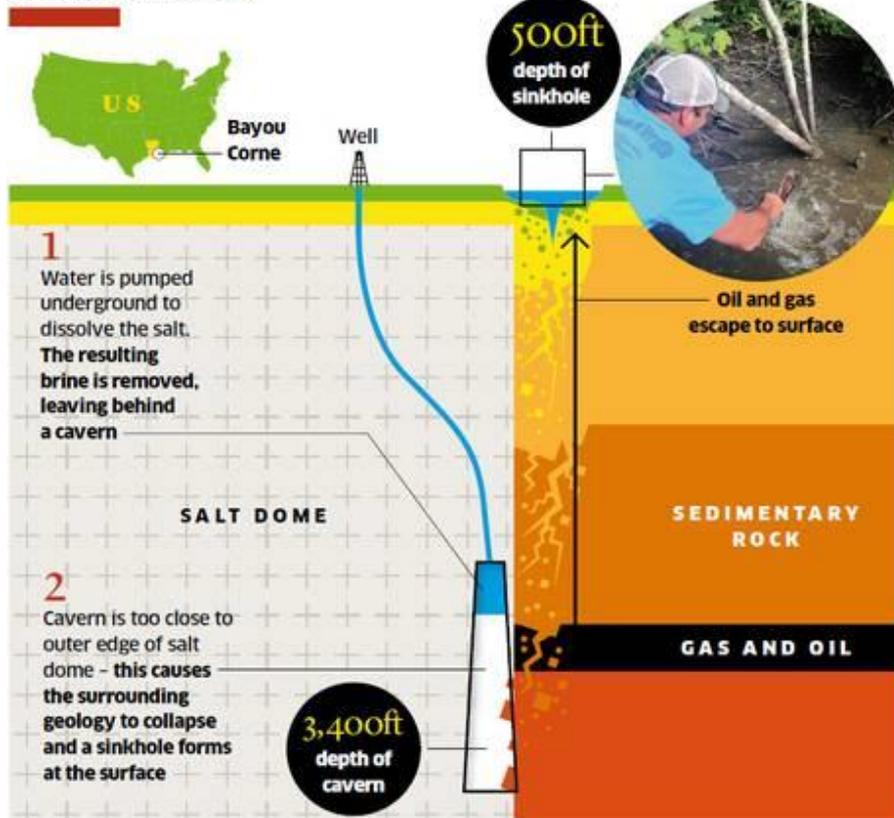
Environmental activists brought numerous cases to the court last year claiming that Shell's Arctic drilling plans violated the National Environmental Policy Act, the Clean Water Act and the Endangered Species Act.

Plaintiffs had asked that the courts void drilling approvals already granted by regulators. These regulators subsequently suggested that the conservation groups had misunderstood the laws. The presiding judge ruled in favor of Shell and the government by maintaining the original approvals.

The official ruling determined that the U.S. Interior Department's (DOI) process was thorough. However, the judge did emphasize that the approvals from the DOI were not an authorization for any activity, but simply a reassurance that Shell's response plans met regulatory and statutory requirements for worst-case scenarios. *The Maritime Executive* [Read more](#) [Related report in FuelFix](#)

USA: A WAY OF LIFE ON THE BRINK OF EXTINCTION IN THE LOUISIANA BAYOUS

MAKING OF A DISASTER



August 4 - "It used to be the most beautiful place on Earth. I thought that I'd die down there." The wistful words of Mike Schaff crackle through the co-pilot headphones as he banks his single-propeller plane to make one last circle over the small jumble of homes and canals deep in the verdant bayou country of Louisiana that he has called home all his life.

The burly Mr Schaff, who barely fits in the tight quarters of the cockpit, is not up here to show how the bayous shimmer in the evening light. He has returned, as he has repeatedly in the past year, to view the saucer-shaped lake that sits to the side of his tiny hamlet of Bayou Corne. "Did they tell you it's still growing?" he asks, before pointing to a faint oil sheen you could only see from up here.

By "they" he means Texas Brine, a Houston company that is grappling with an environmental disaster as frightening as it is unprecedented. The lake is in fact a giant sinkhole that opened up overnight 12 months ago this weekend, swallowing ancient trees whole. Nor has it been quiet since. The hole goes through periodic convulsions, or burps, as methane gas escapes to the surface along with quantities

of crude oil. Since appearing, it has expanded from about three acres to some 22.

The Independent [Read more](#)

COLOMBIA: STANDARD CLUB EXPERT SPEAKS AT SOUTH AMERICA'S FIRST WORKSHOP ON OIL POLLUTION RISKS

August 5 - Representatives from the International Group of P&I Clubs (IG) and the International Oil Pollution Compensation Fund (IOPC) spoke at a workshop based seminar in Barranquilla, Colombia from 29 July-1 August dealing with international civil liability and compensation for oil pollution. The event was hosted by ROCRAM (the Operative Network for Regional Cooperation Among Maritime Authorities of the Americas) and the IOPC.

The Standard Club's South American claims specialist, Constantino Salivaras, attended on behalf of the IG and gave presentations on developments in relation to the international legislative framework and the role of IG Clubs in insuring pollution liability. The IG clubs are the main providers of the financial guarantees, the so called 'blue cards', that enable shipowners to obtain their International Convention on Civil Liability for Oil Pollution 1992 (CLC) and International Convention on Civil Liability for Bunker Oil Pollution Damage 2001 (Bunkers Convention) state certificates. *Seatrade Global* [Read more](#)

USA: ACCIDENTS SHOW DEPTH OF DANGER IN SHALLOW WATERS



August 4 - The 2010 Gulf of Mexico oil spill focused attention on the hazards of drilling for oil a mile below the surface of the sea, but recent incidents have brought new attention to dangers that still lurk on the shallow continental shelf, where companies rely on decades-old pipes and platforms to tap aging fields.

[The explosion of a natural gas well 55 miles from Louisiana's coast in July](#), along with [a fatal production platform fire last November](#) and [a leaking gas reservoir in February](#), dispel the argument that the biggest offshore drilling risks exist only amid bone-crushing pressures in deep waters hundreds of miles from the shore.

"There are differences in drilling exploratory wells in deep water versus ongoing production in shallow water," said former deputy Interior Secretary David Hayes. "But the point is that you're dealing with an inherent risk proposition in both. We're moving what can be explosive or volatile hydrocarbons in an environment where you've got water issues and isolation."

Bud Danenberger, a consultant and the former federal chief of offshore regulatory programs, notes that the vast majority of the 150 well control incidents recorded in U.S. waters since the 1950s have occurred in shallow stretches. *Fuel Fix* [Read more](#)

USA & CANADA: PROSPECTS FOR OIL TRANSPORTATION ON NORTH AMERICAN INLAND WATERWAYS

July 26 - In early July 2013, a train of carrying oil derailed in the town of Lake Megantic in Quebec, with devastating results. The oil originated from the Canadian side of the Bakken oil reserves located between North Dakota and Saskatchewan. Prior to the derailment, the news media reported on leaks from oil pipelines. In Western Canada, there is opposition to plans to build an oil pipeline to carry oil from Alberta to a Pacific port. There is also opposition to the Keystone XL oil pipeline that could carry oil from Alberta to Texas.



The opening of the Bakken oil reserve has resulted in massive growth in the railways carrying oil, a result of insufficient capacity in the existing pipelines and a lack of infrastructure for maritime to carry additional. The northern navigable section of the Missouri River crosses the southern region of the Bakken oil reserve, while in Canada, a section of the navigable Saskatchewan River flows in close proximity to the Canadian side of the oil reserve. There is scope for short-distance pipelines to connect the oil reserve to river barge transportation in both countries. *The Maritime Executive* [Read more](#)

CANADA: LAC MEGANTIC: RAIL COMPANY FILES FOR BANKRUPTCY

August 7 - The railway company involved in the train crash that killed 47 people in Lac-Mégantic, Que. filed for bankruptcy Wednesday in the U.S. and made a similar move in Canada. The filings raise questions about the company's ability to pay its share of the cleanup costs for the disaster, and costs associated with defending itself in current and anticipated lawsuits.

In Montreal court, the Canadian arm of Montreal, Maine & Atlantic filed a petition seeking relief under the Companies' Creditors Arrangement Act, while in Maine, the company's U.S. branch filed for Chapter 11 bankruptcy protection. *The Star* [Read more](#)

Lac Mégantic: Quebec first in line to get money from railroad company

August 9 -The Quebec government will be first in line to recoup money from the railroad company involved in the Lac-Mégantic train crash, says the company appointed to oversee the restructuring.

Gilles Robillard, partner at Richter Advisory Group who will head the restructuring of Montreal, Maine & Atlantic Canada Co., said under federal law, the costs incurred by the government for remedying environmental damage will rank ahead of all other claims. *The Star* [Read more](#)

Other news (continued)

USA: RAIL AGENCY PROBES POSSIBLE SAFETY FLAWS IN CRUDE TRANSIT

August 8 - The Federal Railroad Administration said it is investigating the safety of transporting crude oil by rail, including whether chemicals used in hydraulic fracturing are corroding tank cars.

Regulators in July 29 a letter to the American Petroleum Institute, a Washington-based lobbying and standards-setting group for the oil and gas industry, said the chemical composition of the crude is sometimes misclassified at a lower hazard level, violating existing safety rules.

In some cases, the tank cars shipping the hazardous material may not be equipped with "required design enhancements," the FRA said in the letter sent three weeks after a deadly explosion in Quebec of a train hauling oil.

"FRA recommends that shippers evaluate their processes for testing, classifying and packaging the crude oil" that they transport, according to the letter. The agency said it may fine companies that it finds aren't complying with rules for transporting hazardous materials. [Bloomberg](#) [Read more](#)

USA: PERSISTING IMPACT OF ARK. OIL SPILL TEARS COMMUNITY AND FAMILY FABRIC



Photo: Cleanup operations at the site of Exxon's pipeline spill in Mayflower, Ark. Credit: U.S. Environmental Protection Agency

Part 2 of a two-part series on the residents of Mayflower, Ark., who live a short distance from the homes that were evacuated after Exxon's oil spill and who feel neglected. .

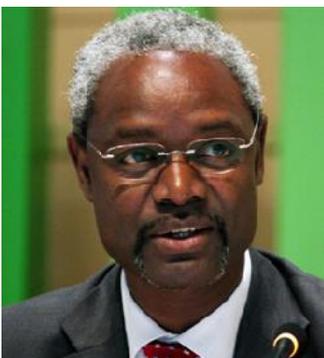
The Pegasus pipeline runs between Illinois and Texas, over streams, under rivers, through wilds, and under relatively few homes. The fact that it split open underneath a housing development was a twist of bad luck. An independent forensic metallurgical report on the faulty stretch of pipe made note of that coincidence, and gave a half-nod to possible causality: "During construction of the homes, the pipeline may have experienced vehicle loadings caused by construction equipment and/or vehicles crossing the pipeline at multiple locations, including over the fractured segment." All else equal, humans are safer keeping

a distance from pipelines, and vice-versa.

The reasons for energy infrastructure to be routed away from populated areas are obvious. In the '60s, for instance, before Arkansas built Lake Maumelle some seven miles southwest of Mayflower, the state insisted Exxon move the Pegasus out of its original path. Now the pipeline merely runs through Maumelle's watershed—one of 18 drinking water sources it traverses in Arkansas alone. State leaders insist Exxon move the Pegasus even further from the lake before the pipeline is restarted, if indeed it ever is, given that the pipeline's failure threatens the drinking water source for 400,000 people in and around Little Rock. Because pipelines rarely run under neighborhoods, **not a great deal is known about what happens to people when there is a break in one.** [Inside Climate News](#) [Read more](#) [Read Part 1](#)

People in the news

UN SECRETARY-GENERAL APPOINTS IBRAHIM THIAW AS UNEP DEPUTY EXECUTIVE DIRECTOR



August 5 - United Nations Secretary-General Ban Ki-moon has announced the appointment of Ibrahim Thiaw of Mauritania as Deputy Executive Director of the United Nations Environment Programme (UNEP).

Mr. Thiaw succeeds Amina Mohamed of Kenya as Assistant Secretary-General and UNEP Deputy Executive Director.

"Mr. Thiaw's professional career spans the full spectrum of practical work at national and regional levels to leading global programmes and experience of United Nations inter-agency and intergovernmental processes," Mr. Ban's spokesperson's office said in a statement announcing the appointment.

Mr. Thiaw joined UNEP's Senior Management Team in 2007 as Director of the Division of Environmental Policy Implementation. Among other work, the Division spearheads UNEP's ecosystem management sub-programme, which promotes an approach to natural resource management focusing on sustaining terrestrial, aquatic and marine ecosystems to meet both ecological and human needs. He also held the lead responsibility for UNEP's Post Conflict and Disasters Management Sub-programme. [UNEP News Centre](#) [Read more](#)



In this issue of the ISCO Newsletter we are printing No. 139 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Fellow of ISCO. As the former Chief Scientist at the British Government's Marine Pollution Control Unit and head of the UK's first government agency, the Warren Spring Laboratory, Douglas is a well known and highly respected figure in the spill response community. He is the Chairman and a founder member of the [International Spill Accreditation Association](#)

CHAPTER 139: THE GENERAL CONTINGENCY PLAN

As to shoreline response, this new contingency plan must dispel the impression that shipping administrations are only concerned with response at sea prior to stranding, by clearly stating that the natural processes of evaporation, solution and dispersion do more to prevent stranding than does the deployed response equipment; that the best way to return the environment to its pre-incident state is to return the stranded substance to the sea for resumption of these natural processes aided for a second time by resumption of the earlier at-sea response; and that water-column concentrations whether natural or dispersant-induced will biodegrade the second time round as they did during the first, while second time recovery from water surfaces will be as easy or difficult as the first time and less difficult than from shoreline surfaces. Again, this contingency plan must clearly state that free water separated from recovered emulsions or separated from oil after the breaking of emulsions is to be directly discharged to sea or to shorelines/inshore-waters for natural dilution and biodegradation of residual dispersed droplets as are those from naturally dispersing slicks prior to stranding.

Further to sea surface response,, this new contingency plan must state clearly that while the encounter rate of response units is limited to 0.18m³h⁻¹m⁻¹k⁻¹ by slick thicknesses of 0.1mm, windrow formation increases the thickness to about 0.3mm by creating intervening ribbons of clear water; and that while this trebles the encounter rate for single-ship sweeping of individual windrows with short and thus more easily handled boom-lengths, the longer more cumbersome booms of twin-ship sweeping encounter both ribbons and windrows which loses the trebling while doubling the ship-use; that while water-in-oil emulsion formation to 80% water-content increases 0.1mm thickness to 0.4mm, the oil-content still equates to the 0.1mm thickness but quadruples the downstream processing task; and that while emulsions pressed against shorelines by onshore winds have stranded as 4-6mm layers, this stranding adds the task of separating emulsion from shoreline surfaces to those of post-recovery processing. As to downstream processing in general, this contingency plan must clearly state that the recovery which necessitates it, must be avoided unless viscosity is too high for secondary-dilution/biodegradation in the sea to be sufficiently rapid; that recovery and downstream processing is partly motivated by belief in reuse; but that biodegradation in situ or at approved post-transport land-farming sites are less troublesome options; and that overall processing costs are more than the value recovered as it often is with waste recycling in general, though such knowledge is unwelcome to environmentalist believers.

Further to costs, this new contingency plan must state clearly that fishing bans need more consideration than they have received thus far; that sedentary shellfish physically coated by slicks draining down on them in ebbing tides must be differentiated from fish free-swimming in seawater containing concentrations in the ppm-ppb range; that while the former cannot be offered for sale even in the absence of a formal ban, the latter, when caught without being drawn through floating slicks, have been shown to be free of taint; that filter-feeding shellfish containing oil or oil-emulsion droplets from seawater are cleared thereof by routine depuration, and that current compensation claims are thus caused more by the bans themselves than by the effects of oil releases.

Thus, in light of the biodegradation which converts all released organic substances to carbon dioxide and water as it does all dead organisms of the biomass without causing species-extinction/ecological-disaster, this contingency plan must clearly state its objective as being to increase the accessibility of the former to the micro-organisms responsible for the latter by converting continuous slicks to dispersed droplets, thus increasing their biodegradation rate and thereby cleaning up the observable mess without which oil releases to the sea would never have attracted our attention. We certainly pay no attention to the unobserved biodegradation of the entire biomass. However, this contingency plan must also clearly state the techniques and equipment by which we intend to limit the commerce-interrupting mess by cargo/bunker transfer in safe havens, blow-out prevention and oil-well capping, and the dispersion and recovery techniques and equipment by which we intend to remove such mess as has occurred when viscosity values are too high for droplet-dependent rates of biodegradation to remove it fast enough to avoid commerce-interruption.

However, this contingency plan must also state clearly that its objective is not to provide needless protection of the environment in general, but to return localised environments to their pre-incident states for resumption of commercial activities as quickly and as cost-effectively as possible; that in so doing, its objectives are to limit compensation payments to expenditure incurred on demonstrable cleanup and to demonstrable commercial losses incurred prior to cleanup, while diminishing both by choosing the most cost-effective response techniques and equipment at operational capacities quantitatively related to the expected oil/HNS release volumes and to the expected post-release task of maintaining/resuming the commercial activities at demonstrable risk.

1 The *Rational Trinity: Imagination, Belief and Knowledge*, D.Cormack, Bright Pen 2010 available at www.authorsonline.co.uk

2 *Response to Oil and Chemical Marine Pollution*, D. Cormack, Applied Science Publishers, 1983.

3 *Response to Marine Oil Pollution - Review and Assessment*, Douglas Cormack, Kluwer Academic Publishers, 1999.

IN SITU BURNING: CHAPTER 31



A short series of articles on In Situ Burning 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.

Summary of the Serial

This is the 31st of a series of articles on in-situ burning of oil spills. This series will cover in-situ burning step-by-step and will present the latest in knowledge on the topic.

31. Safety

Safety is the utmost concern in any burn operation. The hazards involved during burn operations, in perceived order of priority include:

- 1 Vapour cloud explosion or fire spread. If there is a volatile component present, the fire can spread at an extremely fast rate. Cases exist where a gasoline and crude oil mixture after being lit spread at about 200 km/hour. Care must be taken in lighting any spill that may potentially result in flame spread through the vapor cloud.
- 2 Spreading of the fire to other locations. The fire may spread to oil that is adjacent to the area desired to be burned, thus endangering human safety or property.
- 3 Flash back. The fire may flash back to the area of origin, thus threatening anyone involved there with the ignition.
- 4 Smoke impact on humans or the environment. The smoke may stay close to the ground and impact humans or the environment.
- 5 Loss of containment. If a fire-resistant boom should break and there was oil or other burnable material in the area, this could cause serious safety concerns.

Worker health and safety precautions

To protect the health and safety of workers involved with in-situ burning, a thorough health and safety plan must be established and be well understood by all personnel involved before the operation begins. As with any operation in which health and safety are issues, workers are responsible for their own safety and for the safety of their co-workers. To assist in the development of proper health and safety plans for in-situ burning, much of the information required can be obtained from existing publications and standards.¹

Preventing unwanted ignition and secondary fires

Once the operation begins, the burn must be closely monitored to allow response personnel to determine if the burn situation must be reassessed, the plan needs to be modified, or the burn must be controlled or terminated. If on the sea, surveillance of the burn area should be arranged to provide such essential information to the tow operators as the thickness and frequency of slicks in the path of the boom tow or containment area, the precise direction of the smoke plume, the area of oil burning, and whether this is increasing or decreasing. If on land, surveillance of the area around the burn, before, during and after the burn is essential.

At sea, two surveillance tactics should be considered - aerial surveillance and surveillance from a larger vessel. The increased visibility from aircraft, particularly helicopters, ensures the safety of the burn operation. However, a larger vessel not only provides a good view of the tow operation from the surface but can also be equipped with extra fire monitors for firefighting capability. This vessel also provides a means of rescue if one of the tow vessels fails.

Any potential difficulties in a burn operation, such as encountering thick burnable slicks that could burn out of control, should be anticipated and avoided. The fire could propagate ahead of the tow vessels or to combustible amenities. Other difficulties that should be avoided are the loss of significant amounts of burning oil behind the boom. These burning patches could also cause problems downwind. This can be avoided by having an extra fire-resistant boom downwind to catch any burning patches or vessels with fire monitors to extinguish them.

Flames spread very rapidly through vapors - as fast as 100 m/s or 200 knots. If burning a volatile oil such as a fresh, very light crude, gasoline, or mixtures of these in other oils, vapor flame spread could occur and cause serious injury. This is referred to as vapor flashback. This can only be avoided by carefully assessing the properties and characteristics of the oil to be burned. If burning these very light mixtures, it must be ensured that no people are in the area. These circumstances are rare because normally, by the time responders have reached an oil spill, the volatile fraction of the oil has been removed. In any case, all burn personnel should be familiar with the hazards and with the difference between the speed of flames spreading on a pool and through a vapor cloud.

Special feature – In situ burning (continued)



Figure 38 Heavily weathered oil is burned inside a fire-resistant boom during the Deepwater Horizon Spill. Another burn is far in the background.

prevent the fire from spreading to nearby combustible material such as grass cover, trees, docks, buildings, and operational vessels.

Perhaps the best way to prevent unwanted or uncontrollable burns is to carve off a manageable section of oil from a large slick and pull it well away from the main slick or other combustible material before igniting it. This oil can be collected using conventional booms and then transferred to fire-resistant booms in an area where it is safe to burn. If oil is close to shore, deflection booms can be used to deflect oil toward a calm area such as a bay where it can be safely burned. Exclusion booms could be used to keep oil away from areas where it is not wanted.

A number of techniques can be applied to prevent secondary fires, fire spreading to unwanted areas, and flashback of the fire to workers. If a boom is used, it must be towed properly. It is important to recognize that a boom fails when towed at a speed faster than about 0.4 m/s (0.8 knots) and that the boom should always be towed into the wind. On most oil slicks, flames will not spread across an oil slick at a rate faster than about 0.2 m/s (0.4 knots). Thus, in a typical situation in which the boom is steadily towed at least at the flame-spreading speed, flames will not reach the boom tow vessels, even at low winds. Caution should be taken, however, because winds can change rapidly. Burns should not be conducted if the tow boats are actually in thick oil or could pass through it.

Operators of a boom tow should be knowledgeable about how to control the area of the burn by increasing or decreasing the tow speed. At excessive tow speeds, the oil will be lost through the boom apex as a result of boom failure, entrainment under the boom, or loss over the top of the boom. At a towing speed that is too slow, the oil, and therefore the fire, will slowly spread to the boom opening, towards the towing vessels. The movement of oil back and forth in the boom is also influenced by the amount of oil encountered. If more oil is encountered than can be burned in the area of the boom, measures will have to be taken to prevent the fire from spreading towards the tow vessels. If no safe action is possible, the fire may have to be extinguished or the boom tow dropped.

Once the oil is burning, extinguishment may not always be straightforward or easy. Several tow control methods have been suggested to extinguish the fire within a towed fire-resistant boom. The first method is to release one end of the boom tow and let the oil spread until it is too thin to burn.¹ Secondly, if the tow speed is increased to greater than containment velocities (0.4 m/s or 0.8 knots), oil will submerge under the boom and the fire is often extinguished. Since this method has not been tested and may be hard to carry out, it is not suggested as the primary technique. Another suggested method is to slow down the towing rate thereby reducing the encounter rate.¹

It is recommended that fire extinguishing equipment be available during the burn. One dedicated fire extinguishing vessel should be positioned beside the boom containing the burn. During burn operations at sea, those who must be near the burn such as the tow-boat operators can be protected by ensuring that fire monitors of sufficient capacity are available. These monitors can be left on to ensure they are ready if needed. Extra fire monitors and experienced crews should be available on the surveillance vessel to assist if a fire spreads. The fire can also be extinguished by using a firefighting foam made for liquid fuel fires and, if available, aircraft with water-bombing capabilities. To ensure safety, at least two of these extinguishing methods should be ready at a burn site. When burning is done close to shore, fire trucks and crews can be stationed at strategic points on land to fight unwanted secondary fires.

References

- 1 Fingas, M., "In-situ Burning", Chapter 23, in *Oil Spill Science and Technology*, M. Fingas, Editor, Gulf Publishing Company, NY, NY, pp. 737-903, 2011

To be continued

Publications

FOR YOUR INTEREST – LINKS FOR RECENT ISSUES OF PERIODICALS

ASME EED EHS Newsletter	News and commentary on HSE issues from George Holliday	Most recent issue
Bow Wave	Sam Ignarski's Ezine on Marine & Transport Matters	Current issue
Cedre Newsletter	News from Cedre in Brittany, France	June 2013 issue
The Essential Hazmat News	Alliance of Hazardous Materials Professionals	August 5 issue
USA EPA Tech Direct	Remediation of contaminated soil and groundwater	August 1 issue
USA EPA Tech News & Trends	Contaminated site clean-up information	May 2013 issue
Technology Innovation News Survey	From US EPA - Contaminated site decontamination	June 1 - 15 issue
Intertanko Weekly News	International news for the oil tanker community	No. 32 2013
CROIERG Enews	Canberra & Regions Oil Industry Emergency Response Group	August 2013 issue
Soil & Groundwater Product Alert	From Environmental Expert	August 5 issue
Soil & Groundwater Ezine	Articles, papers and reports	August 2013 issue
Soil & Groundwater Newsletter	From Environmental Expert	August 8 issue
Soil & Groundwater Events	Upcoming events compiled by Environmental Expert	July 2013 issue
IMO Publishing News	New and forthcoming IMO publications	July 2013
IMO News Magazine	News from the International Maritime Organization	No 2, 2013
Pollution Online Newsletter	News for prevention & control professionals	August 7 issue
EMSA Newsletter	News from the European Maritime Safety Agency	July 2013 issue
JOIFF "The Catalyst"	Int'l Organisation for Industrial Hazard Management	July 2013 issue
Int'l Environmental Technology	Environmental Monitoring, Testing and Analysis	April 2013 issue
HELCOM Newsletter	Baltic Marine Environment Protection Commission	May 2013 issue

CENTER FOR BIOLOGICAL DIVERSITY MAPS EVERY U.S. OIL PIPELINE SPILL SINCE 1986 (VIDEO)

August 3 - The environmental group the Center for Biological Diversity (CBD) recently released a startling animated map showing all "significant" spills from oil, gas, and chemical pipelines in the last 27 years.

The animated map shows about 8,000 spills labeled "significant" by the federal Pipeline and Hazardous Materials Safety Administration.

Volatile substances spilled includes natural gas, oil, diesel fuel, gasoline, fuel oil and anhydrous ammonia. *Opposing Views*
[Read more](#) [Thanks to Don Johnston of ISCO Industry Partner, DG & Hazmat Group]

MESSAGE FROM DR. MOAYED Y. AL-BASSAM, CHAIRMAN OF THE BOARD – REGIONAL CLEAN SEA ORGANIZATION (RECISO)



The Regional Clean Sea Organisation (RECISO), which is the regional environmental arm for the national oil and shipping companies in the Gulf. Our mission is to protect the waters of the Gulf region by firstly preventing oil spills and other oil derivatives from polluting the waters and secondly by helping to clean them up in times of accidents. Recso acts as an umbrella under which the major oil and shipping companies can come together and mutually cooperate in the event of an accident. We believe that an important way of preventing spills is by educating both the oil and shipping sectors as well as the general public about the hazards of oil pollution in the Gulf waters, the responsibility of each individual towards protecting these waters and solutions to the many problems that face us today. *RECISO* [Read more](#)

USA: OSHA HAZARD COMMUNICATION STANDARD QUICKCARDS

Safety Data Sheets [PDF* 171 KB] Spanish [PDF* 203 KB]

[Site for downloading Quickcards](#)

Labeling [English/Spanish PDF* 447 KB]

Pictograms [English/Spanish PDF* 312 KB]

[Thanks to PCJR, Hazmat 101 Group]

Training

USA: GOVERNOR CUOMO ANNOUNCES TRAIN DERAILMENT PREPAREDNESS TRAINING

August 9 -New York Governor Andrew M. Cuomo on Friday announced more than 400 New York National Guard Soldiers and Airmen will conduct emergency preparedness activities dealing with response to a train derailment and chemical spill. [More info](#)

USDOT HAZMAT TRAINING SEMINARS

[More info](#) [Thanks to Hazmat 101 Group]

Training (continued)

ISAA TRAINING DAYS EVENT ON 3-4 SEPTEMBER AT ENNISKILLEN, NORTHERN IRELAND

We have put together an interesting programme for you this year but to secure places **do not delay** in making your booking.

The MCA Level 2 course is being run by NI / MCA accredited Briggs Environmental and Certificates will have a 3 year validity for accreditation purposes.

The Introduction to Contaminated Soil and Groundwater Remediation is something we have not done before and will help you gain a good understanding of the available approaches and techniques available for resolving problems in what can be a challenging area of operations. We are fortunate in having been able to secure the support of Celtic Technologies, one of the most experienced practitioners in this specialised field. In addition, one of our members, Mullan Drilling, will be giving a demonstration of borehole drilling.

[Download the detailed programme](#) and the Booking Form at www.spillcontrol.org/booking_form_castle_archdale.html

Events

USA: GULF COAST ECOSYSTEM RESTORATION COUNCIL TO MEET ON AUGUST 28, 2013

The Gulf Coast Ecosystem Restoration Council (Council) will meet on Wednesday, August 28, 2013, at 1:00 p.m. CDT to vote on the Initial Comprehensive Plan: Restoring the Gulf Coast's Ecosystem and Economy (Plan). The public is invited to attend the Council Meeting. The meeting will take place at the Hyatt Regency Hotel, 601 Loyola Ave, New Orleans, Louisiana. U.S. [More info](#)

AUSTRALIA: EMERGENCY RESPONSE SEMINAR - THURSDAY 5TH SEPTEMBER IN MELBOURNE

Emergency Response Day has a focus on dangerous goods and tanker incidents and the ability to recover product and equipment after an incident. It also has an interest in the causal factors – why do incidents occur and how can they be prevented? [More info](#)
This is part of the Freight Week 2013 Event [More info](#)

Job vacancies

VIKOMA INTERNATIONAL HAS TWO POSITIONS OPEN IN ITS SALES TEAM

Two positions are available in Vikoma's Sales team – 1 in Latin America and 1 in the UK and Europe. [More info](#)

Company news

ULSTER ENGINEERING COMPANY HELPS TO CONTAIN THAI OIL SPILL

Products made by a Co Antrim company are playing a major role in the clean-up of a devastating oil spill in [Thailand](#).

Fast Engineering Ltd, established in 1981 by Seamus Connolly, makes FASTANK, a liquid storage container for use in a number of sectors, including oil and chemical spill clean-ups, firefighting, military, fish-farming and animal rescue. The company, based in Antrim, exports to more than 80 countries throughout the world.

Mr Connolly said that some of the equipment he has seen in pictures and videos beamed across the globe via international news channels is decades old. He added: "We receive news flashes when an oil spill takes place and we were pleasantly surprised to see some of our products involved in the clean-up." Looking at some of the tanks, they are about 20 years old, which proves how durable they are.

The ISCO Newsletter is published weekly by the International Spill Control Organisation, a not-for-profit organisation supported by members in 45 countries. ISCO 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 organisations. ISCO is managed by an elected executive committee members of which are **Mr David Usher** (President, USA), **Mr John McMurtrie** (Secretary, UK), **Mr Marc Shaye** (USA), **Mr Dan Sheehan** (USA), **M. Jean Claude Sainlos** (France), **Mr Kerem Kemerli** (Turkey), **Mr Paul Pisani** (Malta), **Mr Simon Rickaby** (UK), **Mr Li Guobin** (China), and **Captain Bill Boyle** (UK). 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 Psarftis** (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). More info on Executive Committee and Council Members can be found on the ISCO website at www.spillcontrol.org

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