ISCO NEWSLETTER

The Newsletter of the International Spill Response Community

Issue 282, 9 May 2011

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News

WORST-CASE SCENARIO OIL WELL BLOWOUT COULD SPILL 200 MILLION LITRES IN ARCTIC, AGENCY SAYS

April 27 - The U.S. federal agency overseeing offshore drilling in Alaska says the worst-case scenario for a blowout in the Chukchi Sea lease could spill more than 200 million litres of oil into Arctic waters.

That's a quarter of the Deepwater Horizon spill in the Gulf of Mexico but far more than Shell Oil — the major leaseholder in the area — says it could handle under its response plan.

Shell has consistently said that the chance of a blowout in the relatively shallow waters off Alaska's northwest shore is minimal.

According to the memo prepared by the Alaska office of the Bureau of Ocean Energy Management, Regulation and Enforcement, a worst-case scenario blowout could initially discharge 61,000 barrels per day — or about 2.6 million gallons (9.8 million litres).

The discharge at the hypothetical well would decline rapidly as the oil reservoir depressurized and fall to about 790,000 gallons per day after a month, according to the report.

But the cumulative discharge over the quickest period estimated for drilling a relief well — a span of 39 days — would mean a discharge of 58.1 million gallons into environmentally sensitive Arctic waters. Read more

[Thanks to Don Johnston of ISCO Associate Member, DG & Hazmat Group, for passing on this report]

News (continued)

UK: NORTH SEA OIL LEAK CAP 'MAY FAIL' IN DEEP WATERS

Britain's new multi-million-pound wellhead capping device to prevent oil leaks may not be strong enough to tackle blowouts on wells in the deepest waters around the British Isles, it is claimed.

The cap was commissioned in the wake of BP's Gulf of Mexico oil spill to calm fears about drilling, especially waters west of the Shetlands.

Designed by the UK Oil Spill Prevention and Response Advisory Group (OSPRAG), the cap would have a good chance of working on the vast majority of the 11,000 wells on the UK continental shelf.

It is capable of capping a well flow of up to 75,000 barrels a day and in water depths of up to 1,670m (5,500 feet).

But the environmental group Greenpeace says there are wells where the cap is unlikely to be effective in the event of a major blow-out.

The deepest wells are said to be the ones at greatest risk and the deepest North Sea well was drilled in 2001 in more than 1,800m of water. And ExxonMobil and Providence Resources are about to start drilling around 10 exploration and development wells at their Dunquin oil and gas field at depths of around 1,700m.

In evidence to the UK energy committee, French oil giant Total acknowledges: "[North Sea] wells have been drilled in water depths up to 1,800m." Oil and Gas UK, the industry body, submitted a memorandum saying: "The North Sea with a water depth range of approximately 100ft to 700ft, was considered to be deep water 40 years ago.

"Depths west of Shetland vary from approximately 500ft to 6,000ft (1,800m) plus." Read more

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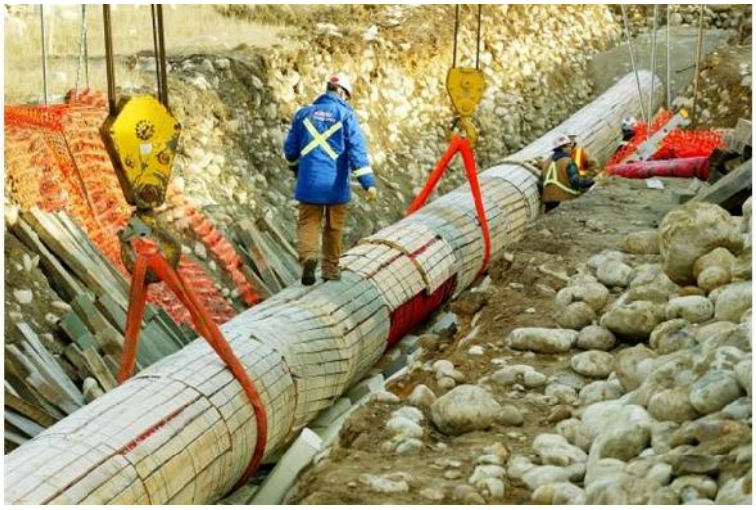
CANADA: RAINBOW OIL PIPELINE LEAK LARGEST IN 36 YEARS



A major leak on the Rainbow pipeline comes on the heels of a pinhole leak on Kinder Morgan's 57-year-old Trans Mountain pipeline. Photograph by: Candace Elliott, Candace Elliott

May 3 - An oil spill in a remote northwestern corner of Alberta has turned out to be the province's largest in 36 years, according to regulators.

Approximately 28,000 barrels of oil were spilled in the Rainbow pipeline rupture, which was discovered April 29, the Energy Resources Conservation Board said Tuesday.

A spill of that magnitude on a provincial pipeline hasn't happened since 1975 when the Bow Valley line leaked 40,000 barrels of oil, said board spokesman Davis Sheremata.

This is the biggest crude oil pipeline spill that we've had in certainly some time, Sheremata said.

Crews reached and exposed the damaged section of Rainbow pipe Tuesday afternoon after being hampered by boggy conditions. Sheremata said the spill had been contained and cleanup efforts were ongoing, Sheremata said. Read more

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USA & CANADA: DEPARTMENT OF ECOLOGY HELPS TACKLE TRANSBOUNDARY OIL SPILL ISSUES

April 29 - There are few environmental catastrophes that can blur interstate and international boundaries as quickly as a major oil spill to the marine waters of Washington, Alaska and British Columbia (B.C.).

Regardless of where a large spill originates, the adverse environmental effects on our shorelines, fish and wildlife, and other environmental, economic and cultural resources can spread far and wide.

Wherever oil reaches, the harm will be devastating and similar. Yet the laws and regulations guiding how government agencies and private response entities prepare for and respond to transboundary marine oil spills are far from uniform.

To tackle the transboundary oil spill issue, 90 natural resource trustees and stakeholders who live and work in Washington, British Columbia and Alaska worked with the Pacific States-British Columbia Oil Spill Task Force to document the “who’s who” and “what’s what” when it comes to response planning and readiness for the U.S.-Canadian transboundary oil spill issues.

In Washington, the Department of Ecology (Ecology) helped craft the joint report titled “Review of Planning and Response Capabilities for a Marine Oil Spill on the U.S.-Canadian Transboundary Areas of the Pacific Coast.” The report was just released and copies are available online.

The report examines existing U.S.-Canadian transboundary oil spill response plans and capabilities for the Washington-British Columbia and British Columbia-Alaska border areas.

It makes 111 recommendations to federal, state, provincial, and local government agencies, response organizations, industry, American Indian tribes and Canada First Nations, and U.S. and Canadian coordinating groups. The topics cover response command, planning, operations, logistics, financial issues, and how to ensure that media and the public receive timely information about transboundary spills. Read more

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NIGERIA: RISING ILLEGAL BUNKERING AS NEW CHALLENGE IN NIGER DELTA

After recently sailing through some of the Niger Delta waterways and creeks, BEN EGUZOZIE writes that amnesty programme may have reduced attacks on oil installations , but it has thrown up a buoying bunkering business in the region.

The 2009 amnesty offer by the Federal Government to militants has produced some positive results, to the effect that, attacks to oil installations in the Niger Delta region have almost stopped completely in the last 18 months. But, other dimensions to the militancy have rather been upbeat. These are crude oil stealing – otherwise called illegal bunkering and illegal refining. The joint military task force, Operation Restore Hope, which was deployed to the Niger Delta following increased militants’ attacks and destruction of oil facilities from 2004, said, it now grapples with increasing illegal bunkering and illegal refineries. Since January this year, the JTF said it has impounded more barges, wooden boats, drums of oil, and other container vessels – all laden with stolen crude oil. Added to this act is erecting of illegal refineries – which is using drums to carry out rough heating up of the stolen crude oil to produce less-finished premium motor spirit (PMS) commonly called fuel, or poor quality automotive gas oil (AGO) known as diesel. These activities, said the JTF, are not localized to one state – they are massive –happening in most of the oil producing states of the region. But states like Rivers, Bayelsa and Delta top the log; while others are seeing minimal activities. Read more

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CANADA: CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 RELEASE AND ENVIRONMENTAL EMERGENCY NOTIFICATION REGULATIONS

Provincial Contacts for 24-hour Environmental Emergencies

To its Release and Environmental Emergency Notification Regulations, Canada has added telephone numbers of provincial offices that can be notified in place of Environment Canada 24 hours a day if a hazardous substance is released or deposited in the environment. The move follows from Environmental Occurences Notification Agreements and notification protocols between the federal and the provincial and territorial governments. Read more [Thanks to pcjr of Hazmat 101 Group for passing on this item]

UKRAINE : CHERNOBYL NUCLEAR DISASTER: UKRAINE MARKS ANNIVERSARY

Ukraine is marking the 25th anniversary of the world's worst nuclear accident - at the Chernobyl power plant. An explosion at one of the plant's reactors sent a plume of radiation across Europe in 1986, harming or killing possibly thousands of people.

Ukrainian President Viktor Yanukovych and his Russian counterpart, Dmitry Medvedev, are visiting the site for a memorial ceremony.

The anniversary comes amid renewed global protest over nuclear power. The debate has been reinvigorated by the threat of radiation from Japan's crippled Fukushima plant in the aftermath of a devastating earthquake and tsunami. Read more

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JAPAN: IAEA FUKUSHIMA NUCLEAR ACCIDENT UPDATE LOG - UPDATES OF 5 MAY 2011

Emergency at Fukushima Daiichi Nuclear Power Plant Since 21 April

Overall, the situation at the Fukushima Daiichi nuclear power plant remains very serious.

The IAEA receives information from various official sources in Japan through the Japanese national competent authority, the Nuclear and Industrial Safety Agency (NISA). This Update Brief is based on information received by the IAEA Incident and Emergency Centre up to 17:00 UTC on 3 May 2011.

Fukushima Daiichi Nuclear Power Plant Status

The IAEA has developed new charts for tracking the progress made towards fulfilling the three basic safety functions of the IAEA safety standards: prevention of criticality, removal of decay heat and mitigation of radioactive releases. These new charts, one for each of the reactor units and for the spent fuel pools, will replace the three-colour status chart that has been in use up until now. The charts provide the IAEA with a benchmark for following progress under "Roadmap" plan announced previously by the Tokyo Electric Power Company (TEPCO) to bring the nuclear reactors and the spent fuel pools at the Fukushima Daiichi plant to a stable ccooling condition and to mitigate radioactive releases.

On 27 April TEPCO provided an update of the estimated percentage of core damage for **Units 1, 2 and 3**: for **Unit 1** the core damage was revised from an estimated 70% to 55%; for **Unit 2** the core damage was revised from an estimated 30% to 35%; and for **Unit 3** the core damage was revised from an estimated 25% to 30%. This reflects a revised assessment since 15 March rather than any recent changes in conditions in the reactor cores.

On 29 April TEPCO checked the status inside the reactor building of **Unit 1** using a remotely controlled robot and confirmed that there was no significant leakage of water from the primary containment vessel. Nitrogen gas is still being injected into the containment vessel in Unit 1 to reduce the possibility of hydrogen combustion inside the containment vessel.

TEPCO has a plan to fill the primary containment vessel of **Unit 1** with water up to a level above the reactor fuel rods. This measure is intended to provide stable cooling of the reactor and reactor pressure vessel. (On 5 May TEPCO submitted a report to NISA on this plan).

In **Unit 2 and Unit 3** fresh water is being continuously injected into the reactor pressure vessel and temperatures and pressures remain stable.

Fresh water is being injected as necessary into the spent fuel pools of Units 1 - 4. Radionuclide analysis of a water sample taken from the **Unit 4** spent fuel pool on 28 April detected levels of Cs-134 of 49 Bq/cm3; levels of Cs-137 of 55 Bq/cm3; and levels of I-131 of 27 Bq/cm3.

An amount of approximately 70 000 tonnes of stagnant water with high-level radioactivity in the basement of the turbine buildings of **Unit 1, Unit 2 and Unit 3** is being transferred to the condensers, the radioactive waste treatment facility and temporary storage tanks. Stagnant water in the basement of the turbine building of Unit 6 is being transferred to a temporary tank. Countermeasures against water outflow to the sea and to prevent and minimize the spread of the radionuclides in water have been put in place.

Full-scale spraying of anti-scattering agent is continuing at the site with the use of both conventional and remote controlled equipment. Read more

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USA: SCIENTISTS CALL FOR MORE STUDIES ON HYDRAULIC FRACTURING

May 6 - Scientists from Cornell University and Ithaca College briefed congressional aides Friday on what they say is a lack of research on the health and environmental impacts of a natural gas drilling process called hydraulic fracturing.

”Fracking is surrounded by metaphors rather than data,” said Sandra Steingraber, a biologist and scholar in residence at Ithaca College. “Many of the chemicals used in fracking are carcinogens.”

Federal energy officials announced Thursday they will create a working group to study hydraulic fracturing. Energy Secretary Steven Chu wants the panel of scientists, environmentalists and industry representatives to report within 90 days on ”immediate steps that can be taken to improve the safety and environmental performance of fracking.”

Panel members will issue a second report within 180 days, providing advice also to the Environmental Protection Agency and the Interior Department. Read more

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Technology

EL PASO AND HALLIBURTON PIONEER THE FIRST NATURAL GAS COMPLETION USING ALL CURRENT CLEANSUITE™ `GREEN TECHNOLOGIES` FOR HYDRAULIC FRACTURING AND WATER TREATMENT

May 2 - Halliburton (NYSE: HAL) and El Paso Corporation (NYSE: EP) today announced that an El Paso-operated well in North Louisiana is the first natural gas producing well to be completed using all three Halliburton proprietary CleanSuite™ production enhancement technologies for both hydraulic fracturing and water treatment.

More than four million gallons of CleanStim® hydraulic fracturing fluid comprised of ingredients sourced from the food industry were utilized to enhance the well and resulted in faster production of natural gas. Nearly 4.8 million gallons of water were treated through Halliburton's CleanStream® process, which uses UV light instead of additives to control bacteria in water. In addition, the CleanStream process prevents the addition of more than 2,400 gallons of biocide per well. Another one million gallons of produced water was prepared for recycling in the well through the CleanWave™ system, significantly reducing the need for freshwater.

"Halliburton is proud that we've developed the CleanSuite™ system, but in order for these technologies to be commercial and truly transform our industry, we need operators who are willing to take that first step and help prove these new technologies. El Paso stepped up to that challenge and we applaud their foresight to help pioneer completely new production enhancement technologies," said Marc Edwards, Halliburton senior vice president, Completion and Production Division.

"Teaming with Halliburton on the use of this 'green' suite of technologies was a 'win' for us and demonstrates that industry is proactively developing important advancements for hydraulic fracturing," said John Jensen, senior vice president, Operations, El Paso Exploration & Production.

"El Paso's use of the CleanSuite system not only represents our commitment to responsible energy development, but it is also consistent with our long-standing approach to conduct our hydraulic fracturing operations in an environmentally sensitive manner. We will be reviewing the CleanSuite system, along with other similar technologies, for future well applications as we seek to improve efficiency, production, and minimize the environmental footprint." Read more

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TESTS SHOW NEW BIOSENSOR CAN GUIDE ENVIRONMENTAL CLEAN UPS

The Money Point site during dredging of PAH-contaminated sediments. The orange boom contains the released sediment. The VIMS scientists operated the biosensor from the small boat near the boom. Photo courtesy of Joe Rieger, Elizabeth River Project.

Tests of a new antibody-based "biosensor" developed by researchers at the Virginia Institute of Marine Science show that it can detect marine pollutants like oil much faster and more cheaply than current technologies. The device is small and sturdy enough to be used from a boat.

Testing of the biosensor in the Elizabeth River and Yorktown Creek, which both drain into lower Chesapeake Bay, shows that the instrument can process samples in less than 10 minutes, detect pollutants at levels as low as just a few parts per billion, and do so at a cost of just pennies per sample. Current technology requires hours of lab work, with a per-sample cost of up to $1,000.

"Our biosensor combines the power of the immune system with the sensitivity of cutting-edge electronics," says Dr. Mike Unger of VIMS. "It holds great promise for real-time detection and monitoring of oil spills and other releases of contaminants into the marine environment."

The biosensor was developed and tested by Unger, fellow VIMS professor Steve Kaattari, and their doctoral student Candace Spier, with assistance from marine scientist George Vadas. The team's report of field tests with the sensor appears in this month's issue of Environmental Toxicology and Chemistry.

The instrument was developed in conjunction with Sapidyne Instruments, Inc., with funding from the state of Virginia, the Office of Naval Research, and the Cooperative Institute for Coastal and Estuarine Environmental Technology, a partnership between NOAA and the University of New Hampshire.

Technology (continued)

The tests in the Elizabeth River took place during clean up of a site contaminated by polycyclic aromatic hydrocarbons (PAHs), byproducts of decades of industrial use of creosote to treat marine pilings. The U.S. Environmental Protection Agency considers PAHs highly toxic and lists 17 as suspected carcinogens.

The biosensor allowed the researchers to quantify PAH concentrations while the Elizabeth River remediation was taking place, gaining on-site knowledge about water quality surrounding the remediation site. Spier says the test was "the first use of an antibody-based biosensor to guide sampling efforts through near real-time evaluation of environmental contamination." Read more

Events

Events are listed here as soon as possible after they are notified to ISCO and will usually only be featured once in this column. To find a more comprehensive listing of upcoming events, including ones previously announced in this column, click HERE

KUWAIT INTERNATIONAL OIL SPILL TECHNOLOGY & RECOVERY EXPO 2011

The Kuwait International Oil Spill Technology & Recovery Exhibition and Conference 2011, takes place in Kuwait at Salwa Sabah Al-Ahmad Hall from 22 - 24 November / 2011.

The event is designed to present and promote the latest technologies and the global developments in the field of spill prevention, preparedness, response, cleanup and restoration, port and maritime security, marine salvage, professional services and compliance, and more. For more information, please contact Abdelhamid Djellout, General Manager Tel: 00 965 25715933. Fax: 00 965 25738036. www.bestexpo-kw.com www.protexkuwait.com

Publications

GL NOBLE DENTON PUBLISHES NEW GUIDELINE ON BLOW-OUT PREVENTER CERTIFICATION

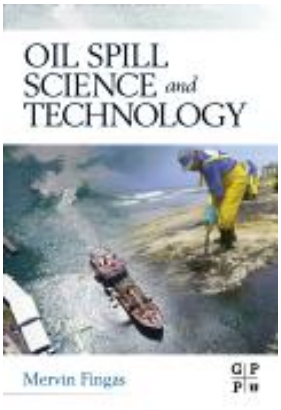
GL Noble Denton has published a new Guideline for the certification of blow-out preventers (BOPs). The Guideline clearly defines the process to be undertaken by independent third party certification bodies in certifying the integrity of the asset, which monitors and controls the flow of oil and gas wells.

The publication of the Guideline follows the first anniversary of the Macondo oil field incident in the Gulf of Mexico, during which the failure of the BOP from the Deepwater Horizon drilling rig contributed to lost lives and environmental damage. The event has highlighted the crucial need for operators to thoroughly inspect the reliability of this critical piece of safety equipment on a regular basis.

Since the Macondo incident, the oil and gas sector has placed increased emphasis on the inspection and testing of BOPs to ensure compliance with industry standards. The new Guideline published by GL Noble Denton provides rules and procedures for certifying BOPs throughout their lifecycle, from the design and manufacture phase through to annual inspection during operation.

The Guideline will be used by GL Noble Denton as the standard to which the company will inspect and certify BOPs as part of its certification services for sub-sea drilling assets for its clients, who include some of the oil and gas industry's best known exploration and production companies. It has been published using the combined expertise of the GL Group's experienced engineers in Houston, Aberdeen, Sandefjord and Hamburg. More info

OIL SPILL SCIENCE & TECHNOLOGY



Key Features

Covers spill dynamics and behaviour. Definitive guide to spill treating agents. Complete coverage of cleanup techniques Includes fate and effects of oil spills and means to assess damage.

Description

The National Academy of Sciences estimate that 1.7 to 8.8 million tons of oil are released into world's water every year, of which more than 70% is directly related to human activities. The effects of these spills are all too apparent: dead wildlife, oil covered marshlands and contaminated water chief among them. This reference will provide scientists, engineers and practitioners with the latest methods use for identify and eliminating spills before they occur and develop the best available techniques, equipment and materials for dealing with oil spills in every environment. Topics covered include: spill dynamics and behaviour, spill treating agents, and cleanup techniques such as: in situ burning, mechanical containment or recovery, chemical and biological methods and physical methods are used to clean up shorelines. Also included are the fate and effects of oil spills and means to assess damage. Edited by Mervin Fingas. More info

Cormack's Column

In this issue of the ISCO Newsletter we are printing No. 25 in a series of articles contributed by Dr Douglas Cormack.

Dr Douglas Cormack is an Honorary Member 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

KNOWLEDGE OF WATER-IMMISCIBLE SYSTEMS (CHAPTER 25)

The variable stability of water-in-oil emulsions is relevant to the observed persistence of oil slicks at sea, and to the efficiency of dispersant and mechanical recovery operations, to the ease of breakdown on exposure to warming by sunlight when floating on calm seas and when stranded on shorelines and to the ease of breakdown when treated with demulsifiers in the course of oil recycling or final disposal.

As to stability, we know this to be dependent on surface-active molecules which are attracted to water at one end and to oil at the other and so locate at the interface between the dispersed phase droplets and the continuous phase, a behaviour also exhibited by some finely-divided solids insoluble in both phases. The simplest surface-locating molecules are those of soaps and detergents which disperse oils as droplets in water. In general, the hydrophilic end consists of ionising groups which may be cationic or anionic or even in some cases non-ionic, while the hydrophobic end consists of alkyl or aryl hydrocarbon structures. Thus, water droplets can be dispersed within oils by macromolecular emulsifying substances such as methyl cellulose lignosulphonate, while such as asphaltemes and waxes can act as emulsifiers by precipitating from oils as very fine crystals to be retained at interfaces by surface tension forces. It is clear that crude oils and even some product oils are complex enough to provide a range of natural components capable of creating water in oil emulsions with the energy input provided by wind-induced waves. Indeed, the asphaltenes are themselves of two classes, being either normal alkanes which crystallise/precipitate at hydrophilic/hydrophobic interfaces or aromatic or naphtheno-aromatic compounds which locate at these interfaces by molecular adsorption from solution.

Berridge *et al* investigated the stability of emulsions for a range of crude oils, heavy fuel oils and light distillates by allowing them to spread and thin to uniformity on a flat surface. Emulsions stable enough for such purposes were obtained for all the crude oils investigated with the exception of Brega and Nigerian light which were classified as borderline. Residual (heavy) fuel oil also formed stable emulsions but none were formed by kerosene, gasoline or diesel oils, while that formed by lubricating oil was not stable. It was also observed that stability correlated with asphaltene and vanadium contents but not with wax or sulphur contents or with neutralisation number, emulsions of the high asphaltene oils being stable for many months. Again, Bocard and Gatellier found that while low-asphaltene/low- viscosity oils such as Nigerian light did not form stable emulsions, some higher viscosity oils did so independent of asphaltene content. Yet again, MacGregor and McLean reported unstable emulsions with Libyan Seria, Algerian Zorzatine and Nigerian medium, all of which have asphaltene contents < 0.15%.

Further to the role of wax, Bridie *et al* removed it from Brent crude to show that the de-waxed oil could not form emulsions until the removed wax was replaced. It was also shown that emulsion stability depended on the physical state of the wax, by causing it to dissolve or crystallise in differing size distributions by heating and cooling Kuwait crude oil to differing extents and at differing rates prior to emulsifying it. Again, it was found that pour-point suppressants increase the ease of oil pumping by modifying the physical state of the wax-content to the form which inhibits emulsion formation; that wax removed from lube oil is light in colour while that from crude oil is black; and that the asphaltenes which otherwise blacken removed-wax are themselves pour-point suppressants.

Yet again, it was found that the Kuwait crude contained 6.6wt% asphaltenes and 9.8wt% paraffin wax; that its emulsion contained 68% water with a droplet diameter of 5 to 10 μm and a viscosity of 2.3 x 10^5 cP; that when the asphaltenes and wax were removed the resulting emulsion shed 93% of its water-content in 15 minutes; that the same result was obtained with the asphaltenes removed and the wax retained; that with the wax removed and the asphaltenes retained the resulting emulsion lost 86% of its water content in 15 minutes; that replacement of both gave the original emulsion characteristics; and that when 50% of the black asphaltene/wax mixture from the Kuwait crude was added to a lubricating base-oil which would take up only 1% water in attempts to emulsify it, the resulting emulsion had a water-content of 54% and droplet diameters of 0.01 to 0.03 mm, while with addition of 10% the corresponding values were 67% and < 0.01mm.

Again, when Thomson *et al* removed crystalline wax and other solids by centrifuging they showed that the subsequent emulsions shed 100% of their water-content in 24 hours after being centrifuged at 0°C and 20°C; that they shed 70% in 24 hours after being centrifuged at 35°C; that 55 % was shed in 24 hours by the un-centrifuged sample; and that when the solids removed by centrifuging at 35°C were added to the un-centrifuged sample to increase the solids-content of the original oil, the stability of its subsequent emulsion was further increased.

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.

Products and Services

OILCLEAN BIOREMEDIATION SYSTEM PROVIDES MONITORED OIL BIOREMEDIATION FOR CONTAMINATED WATER AND SOILS

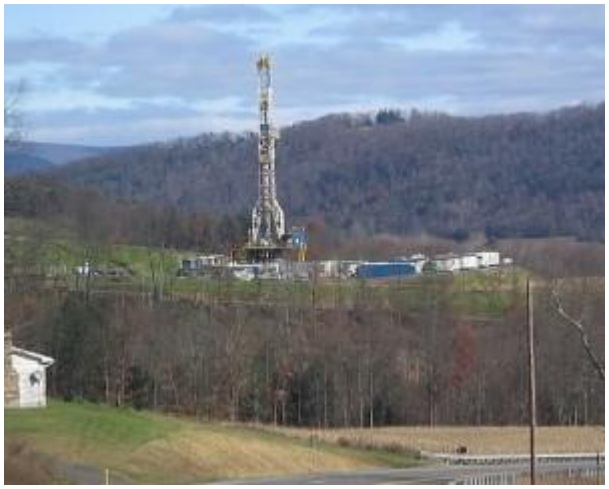
Effective and non-invasive treatment of oil polluted waste, water, and soil is now available with the automatic OilClean bioremediation system from Pro-Act Biotech. The self-powered OilClean system optimizes treatment utilizing onsite and remote system management capabilities to monitor water quality in the treatment zone and to balance nutrients and dissolved oxygen. OilClean is one of only 20 oil bioremediation systems listed on the EPA National Contingency Plan Product Schedule.

OilClean Sensors continually measure water quality in the treatment zone automatically distribute oil-eating microbes, nutrients, and oxygen via the OilClean Control Panel to naturally degrade oil and restore oil-polluted ecosystems. Microbes continue to multiply until the oil is gone, and unlike dispersants, will not harm the environment.

Effective for pre-treatment of oil polluted waste such booms, rags, and plastics prior to landfill transfer, OilClean is also ideal for treatment in sensitive marsh and wetland environments and for ground water and soil remediation challenges. The OilClean Sensors can be placed and maintained without damaging established marsh and wetland ecosystems. More info

REMOVAL OF PETROCHEMICALS FROM WATER PRODUCED BY FRACKING OPERATIONS

A shale gas well in the Marcellus Shale formation. Photo by Ruhrfisch



An absorbent form of silica can remove nearly all petro-chemicals from the water produced by hydraulic fracturing in shale-gas wells, Energy Department scientists announced late last week.

After field testing the modified silica, called *Osorb*, DOE's National Energy Technology Laboratory confirmed it can remove more than 99 percent of oil and grease from water, and more than 90 percent of benzene, toluene, ethylbenzene, and xylenes—also known as BTEX—the volatile compounds that can poison drinking water.

"These tests showed that total petroleum hydrocarbon levels were slashed from 227 milligrams per liter to 0.1 milligrams per liter," said DOE spokesman Jenny Hakun in an April 28 press release that describes Osorb as a "breakthrough technology." More info

Company news

MARINE WELL CONTAINMENT COMPANY OPENS HEADQUARTERS

Marine Well Containment Company (MWCC) announced today that it has opened its headquarters in Houston. The offices house the day-to-day business operations as well as a dedicated emergency response center in the event MWCC is called to respond to a deepwater well control incident in the U.S. Gulf of Mexico.

ISCO Notices

Members who have not yet had their access to the Members' Area of the ISCO website enabled are reminded to send their preferred User Name and Password to the Secretary.