



## N° 237 E – News from July/August 2015

### Emergency response

In August, Cedre provided on-site assistance following 2 relatively minor incidents. First, an agent from Cedre was sent to the port of Le Conquet, Brittany, where another spill of light oil had been reported (see [Newsletter n° 236](#)). The advice given focused on the reinforcement of the containment set-up on the water.

Cedre was also involved in the response to a spill of heavy fuel oil in Brest's commercial port, the origin of which remains unknown to date. Cedre provided technical advice on containment and recovery equipment as well as on clean-up operations.

### Trials in floating mesocosms

As part of a project devoted to chemicals' behaviour funded by the French Navy and the French Environment Ministry ([MEDDE](#)), Cedre conducted trials in floating mesocosms within Brest's military port in June and July. The purpose of these trials was to study the fate of three substances (valeric acid, 2-ethylhexyl acrylate and diisobutyl ketone) when spilled at sea, by regularly sampling the surface slick, water column and atmosphere. The results obtained will help to fine-tune response strategies, generally established based on the physical and chemical properties determined in the laboratory, and to define the risks to which emergency response teams may be exposed. These trials were conducted in optimal conditions, in particular thanks to the involvement of the French Navy.

### Launch of "ITOPF4" experimentation at Cedre

As part of the FishHealth project, in collaboration with Brest University (UMR [LEMAR](#)), an experimentation programme baptised "ITOPF4" was launched in July 2015 in Cedre's greenhouse. The aim of these trials is to assess the effects of acute exposure to an oil/dispersant mixture on the adaptation capacities of sea bass (*Dicentrarchus labrax*) to changes in environmental conditions. For these trials, juvenile sea bass are exposed to an oil/dispersant mixture for 48 hours before being subjected to a decrease in oxygen content in the water (hypoxic challenge) at several intervals: 3 days, 2 weeks, 1 month and 2 months after exposure. The aim is to assess the effects of exposure on the resistance capacity of the fish to a hypoxic event over time. Meanwhile, the detoxification activity and fish flesh contamination are monitored.

### Behaviour studies

Cedre performs pollutant behaviour studies, in particular on crude oils. The aim of these studies is to predict the evolution of a substance in real conditions, to assess the transformation of its physical and chemical properties and to estimate the efficiency of various response techniques (dispersants, recovery, in situ burning, etc.).

These experiments can be conducted in the laboratory, enabling a large number of crude oils to be tested over a short period of time, as well as on a pilot scale, providing a more realistic assessment. This latter option, generally combined with laboratory tests, is more suitable for production crudes.

The results obtained are used in spill [contingency planning](#) to guide those in charge of clean-up operations in their choice of response products, equipment and strategies.

### The Cedre experimentation hall refurbished

The repeated use of oil and chemicals as part of research projects performed in Cedre's experimentation hall had led to corrosion and deterioration of the infrastructures and equipment housed within this facility. Various operations were therefore recently carried out to renovate this hall: full refurbishment of the floor by laying a resin, creation of new water drainage culverts in the floor, installation of storage units, installation of an extractor above the work surface. The networks were altered and completed. The experimentation column, the key piece of equipment housed within the hall, was completely dismantled and its walls treated and passivated. When it was reassembled, the seals were replaced and new vertical rails were installed to facilitate the use of equipment such as observation video cameras.

### In short

#### DATES FOR THE DIARY

► [European Researchers' Night 2015](#) at Océanopolis, on Friday 25th September 2015, from 7 pm

► [ITAC meeting](#), from 22nd to 24th September (at [IFREMER](#) and Cedre).

## Bioremediation conference in Chania, Crete

From 1st to 3rd July, an agent from the Research Department attended the conferences presented within the framework of the [6th European Bioremediation Conference](#), whose main organiser is the University of Crete. Cedre was invited to present a plenary session on its recent activities relating to in situ burning techniques. This was also the opportunity to present the latest experimental studies conducted at Cedre on bioremediation techniques. This 3-day conference was the opportunity for the organiser to hold the annual meeting of the European project [FP7 KillSpill](#) at which Cedre was invited to be a member of the advisory board for the second time in order to provide its opinion and advice on the latest progress of this project which is now entering its final phase (01/2013 - 12/2016).

## Visit to Cedre by Total Fluides

On 15th July, Mr Joël Navaron, President of Total Fluides, and Mr Philippe Lemaire, HSQE Manager, visited Cedre in order to familiarise themselves with the facilities available and to consolidate relations between Total Fluides and Cedre, initiated over 25 years ago. Total Fluides and Cedre jointly conduct many research projects, in collaboration with local universities, in particular on marine dispersants, one of the major development focuses of Total Fluides, as well as many tests on the behaviour in the marine environment of the main substances marketed by Total Fluides (drilling fluids, crop protection products, etc.).

## Quality/environment certification

Every three years, a new auditor performs a "renewal" audit of Cedre's quality and environment management system. This audit was carried out on 28th and 29th May 2015. Two minor non-conformities and nine observations were reported. The corrective action plan for the two minor non-conformities was accepted by the auditor. Cedre's certification is therefore maintained for standards ISO 9001: 2008 Quality Management and ISO 14001: 2004 Environmental Management.

## South-West United States: chemical spill in a river

On 5th August, [EPA](#) agents accidentally spilt 11 million litres of toxic waste water containing arsenic and heavy metals (lead, cadmium and mercury) in Colorado, tinting the water mustard yellow. Rapidly the authorities of the city of Durango banned navigation and fishing on the Animas River as well as water consumption and field irrigation. A state of emergency was declared in Colorado, New Mexico, and in the Navajo Station Indian Reservation. The waste, from the abandoned Gold King Mine, first polluted Cement Creek, then the Animas and San Juan Rivers and finally the Colorado River (one of the primary sources of drinking water in the Western United States). The EPA is regularly monitoring the toxicity of the water (presence of carcinogenic substances). Since the beginning of the spill, the EPA has reported only a few dead fish.

## Reading list

Below is a selection of recently published documents which could be of interest:

API. *Aerial and vessel dispersant preparedness and operations guide. API technical report 1148*. Washington: American Petroleum Institute, 2015. 111 p.

ARCTIC COUNCIL. *Guide to oil spill response in snow and ice conditions in the Arctic*. Arctic Council, 2015. 184 p.

DAVIS, P.M., DIAZ, J.M., GAMBARDELLA, F., et al. *Performance of European cross-country oil pipelines. Statistical summary of reported spillages in 2013 and since 1971*. Brussels: Concawe, 2015. 54 p.

IOPC Funds. *Guidelines for presenting claims for clean up and preventive measures.. 2015 Edition*. London: International Oil Pollution Compensation Fund 1992, 2015. 37 p.

IPIECA, IOGP. International association of oil & gas producers. *Dispersants: subsea application. Good practice guidelines for incident management and emergency response personnel*. London: IPIECA; IOGP, 2015. 70 p.

IPIECA, IOGP. International association of oil & gas producers. *Response strategy development using net environmental benefit analysis (NEBA). Good practice guidelines for incident management and emergency response personnel*. London: IPIECA; IOGP, 2015. 39 p.

MITCHELL, E. *After the spill: investigating Australia's Montara oil disaster in Indonesia*. Sydney: Australian Lawyers Alliance - ALA, 2015. 259 p.

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