

Just Released: A New Look at Oil Spill Response

An Analysis of the BP Macondo Spill Cleanup

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The Science & Technology Advisory Board of the Lawrence Anthony Earth Organization (LAEO) recently published a significant position paper entitled [*A Call for a Twenty-First-Century Solution in Oil Spill Response*](#).

Bringing energy industry professionals, interagency federal and state officials, and environmental interests together at the same table, the work brings forth an important principle overlooked during the 2010 BP Oil Spill:

The foremost reason one cleans up an oil/chemical spill is to REMOVE the pollutants/toxicity from the environment as rapidly as possible so that living organisms can survive and the ecosystem can sustain itself.

Utilizing this principle as a fundamental standard for oil spill cleanup guidance and policy establishes a valuable frame of reference by which one can evaluate response methods—mechanical cleanup, dispersants, and nontoxic agents—as to their effectiveness and economic viability.

The guidance material contained in this work is a constructive offering for every oil-producing country in the world and their potentially contaminated ecosystems. The paper brings a new analysis and assessment of the BP Macondo disaster response. It contains guidelines for the selection process for oil spill cleanup agents, along with an evaluation process that can be used to grade potential effectiveness of those agents in swiftly removing spilled oil from the environment.

The LAEO analysis challenges the current spill remediation standard that “25 percent cleaned up” is an acceptable industry benchmark for an effective spill response, when our research indicates that existing technology can far exceed that.

This unacceptable standard is expressed in the Proceedings of the National Academy of Sciences (PNAS) journal of December 2012 issue. The special feature *Perspective* on the 2010 BP spill response (“*Science in Support of the Deepwater Horizon Response*”), sent mixed messages and missed the importance of the above principle (removing toxicity) as the basis for measuring response effectiveness. While hailing the cleanup as successful, the *Perspective*, co-authored by federal interagency scientists and associates, also acknowledged, “*Despite aggressive recovery and removal efforts, only around one-quarter of the oil was removed by the federally directed response.*”

Notwithstanding these statistics, it is unclear how this academic work arrived at an overall conclusion that the spill response was *effective*, indicating similar methodology will likely be used on future spills.

Long-term and even recent studies of oil spill environmental damage and the response methods employed show that these “successful” methods have failed to remove the toxicity from the environment (and in the case of dispersants, have *added toxicity*), ending up in enormous destruction to wildlife, marine life, the local economy, and human health. See recent [Australian 60 Minutes](#) investigative report aired a few weeks ago leading to Australian officials banning the use of chemical dispersants in their waters. (<http://sixtyminutes.ninemsn.com.au/article.aspx?id=8706910>).

The [Twenty-First-Century Solution](#) paper expresses a significant concern that federal agencies tasked with protecting our waters and natural resources hold the viewpoint that (a) the negative effects of chemical dispersants “need more study before anyone will really know for sure,” while they continue to use them as a preferred preapproved method, and (b) there are no better methods.

This paper’s *Call for Action* details and builds a science-based case for halting the use of dispersants that contain pollutants and do not remove oil and its toxic components from the environment; and more importantly, it presents an effective nontoxic replacement for current methodology.

Existing Solutions in the NCP:

The LAEO Science & Technology Board’s review of the US EPA’s National Contingency Plan (NCP) found that it currently lists a category of nontoxic first-response oil spill cleanup technology, applicable in all environments, that safely and effectively removes hydrocarbons and all harmful chemicals from a spill site, resulting in complete and rapid restoration with no negative environmental “trade-offs.”

If there were no economically viable and effective spill-fighting alternative available, then the situation would be dire indeed. The problem is that the US EPA has restricted the use of this technology in open-water environments, and despite ample supporting science to the contrary, they have refused to correct their policy, which is perpetrating false science throughout the industry. The board researched why.

The LAEO paper addresses how it came to be that a fully developed science-based spill cleanup protocol continues to be obstructed by the U.S. EPA contrary to the Clean Water Act and its Mission Statement despite the fact that it vastly exceeds the results of currently deployed first-response technologies. This widely used and recognized spill-response methodology—Bioremediation Category *Enzyme Additive*—not only quickly detoxifies and diminishes the adhesive qualities of a spill (and, if need be, detoxifies any

deployed dispersants), but its end point is a conversion of close to 100 percent of the toxic spill components to harmless carbon dioxide and water in a matter of a few days to a few weeks. At this time, there is only one supplier—OSEI International—that manufactures an enzyme-additive product (OSE II), which is a currently available, fully tested, commercial product.

This new perspective makes for a complete change in methodology if one keeps in mind again that the only reason for the existence of contingency plans and spill response at all is to remove elevated toxicity levels and the other damaging qualities of an oil spill so that living organisms, from the tiniest microbes up to the largest mammals, can survive.

LAEO has compiled and released this material in support of all sides and stakeholders, recognizing the importance of supporting the indispensable economic contributions to society that oil and gas companies render, while advocating that it is vital, and entirely possible, to simultaneously produce energy and economically protect the environment.

The information presented is intended to provide a gateway for achieving far higher standards in oil spill response as well as for meeting the compliance criteria of the Clean Water Act. The LAEO Science & Technology Advisory Board urges all national, regional, and area oil spill response professionals to consider the data offered and to join them in taking a new look at contingency plans and the science on which they are based.

To summarize the action items:

A Call for Change in Oil Spill Response

Recommended Action

- Ban the use of toxic chemical dispersants, or any other scientifically identified toxic agent used for oil spill “cleanup,” in US navigable waters and all inland environments.
- Revise and correct the National Contingency Plan and all related guidance documents referenced by Regional and Area Response Teams to reflect current science and information, specifically including
 - the immediate withdrawal of the EPA’s *preapproval* (blanket authorization) for the use of dispersants in US navigable waters as part of the National Contingency Plan;

- correction of all material guiding the use of Bioremediation Agents to remove the misinformation and to list EA Type as a first-response nontoxic option;
- add the recommended updated NRT Bioremediation Fact Sheet: *BIOREMEDIATION TECHNIQUES, CATEGORY DEFINITIONS, AND MODES OF ACTION IN MARINE AND FRESHWATER ENVIRONMENTS* to the NRT, RRT, NOAA, and Coast Guard published bioremediation materials to reeducate all team members on the corrected science concerning Enzyme Additive based Bioremediation.
- Issue the necessary authorization for the nontoxic enzyme category bioremediation method already screened by EPA scientists and approved (Bioremediation Agent Type EA, OSE II) to be deployed immediately to bring the Gulf waters and associated environments back to good health.
- Raise pollution removal standards up to the original intent of the Clean Water Act by requiring all companies that have the potential through their working processes of creating oil spills to include NCP-listed products that are nontoxic in their cleanup protocols, ensuring their plans employ methods that swiftly and completely remove oil from a spill area.

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