

Reflections on the Consequences Of the Gulf of Mexico Oil Spill

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Undoubtedly, one of the most important recent negative events in the oil world was the Macondo well oil spill in the Gulf of Mexico. It will bring many changes and have important consequences.

A maxim typical of industrial security says that “when it rains, it pours.” That is, an accident makes us realize everything that was being done wrong in an organization, and this is due above all to two circumstances known as “workplace blindness” or “systemic blindness.”

THE CONTEXT

Although recently, both internal and external pressure has been exerted on *Petróleos Mexicanos* (Pemex) to begin pro-

duction in so-called deep waters as soon as possible, this is not a real necessity, at least not for the country or the company. On the other hand, it may well be a necessity for agents abroad, as stated in a Pemex press release about an 8-percent increase in crude exports.¹ It further stated that Pemex’s crude production in the first 10 months of 2010 kept pace with the same period in 2009, and closed at an average of 2.58 million barrels a day. Based on preliminary figures for oil indicators, of total production, 1.43 million barrels were heavy crude (55 percent), 0.83 million barrels were light crude, and 0.32 million were super-light. In October 2010, production hit an average of 2.57 million barrels a day, a number similar to last September. This means that there is actually no urgency to starting to develop super-deep deposits (see table).

On the other hand, beginning this kind of production of crude at a breakneck speed could lead us to adversely affect Mexican ecosystems, even though the damage may not be perceived directly or may be not very visible in the short term.²

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To evaluate the effects of the Deepwater Horizon oil spill in April 2010 off the Louisiana coast, an interdisciplinary group of Mexican scientists, coordinated by Baja California's Ensenada Center for Scientific Research and Higher Education (CICESE), organized an oceanographic expedition. This launched a five-year monitoring project in the area, unprecedented in Mexican oceanography.

Meanwhile, a study recently published by "Democracy Now!" indicates that the BP oil spill rapidly disseminated toxic chemicals at dangerous enough levels to end marine life in the Gulf of Mexico.³ According to research findings published in *Geophysical Research Letters* magazine, these chemicals were found at a depth of more than 1 000 meters, 13 kilometers away from the well in May 2010, only weeks after the spill began.

Some U.S. specialists think that thousands of species are at risk because in high enough concentrations, these chemicals, called polycyclic aromatic hydrocarbons (PAHs), immediately cause death in animals and, in time, cause cancer.⁴ The governments of the states of Veracruz, Tamaulipas, and Quintana Roo, for their part, brought suit against BP in a Texas court for possible losses associated with the spill.⁵

On this issue, in his article "Advertencias del Macondo" (Forewarnings of Macondo), Mexican researcher John Saxe-Fernández states that the explosion, which caused the biggest

spill and ecological disaster in U.S. history, "is a sign of what the era of the exhaustion of non-renewable natural resources, in this case peak oil, means, its dangers and environmental, socioeconomic, and political-military consequences. In the best-case scenario, a partial recovery of the habitat will take decades."⁶

It should be pointed out that when he talks about peak oil, he is not referring to the end of oil in general, but to conventional, cheap, high quality, easy-access oil. In this first decade of the twenty-first century, other metal and mineral deposits also start to show signs of being exhausted.

SOME PERSONAL REFLECTIONS

As shown, the statements and reports from different authors and media fit together perfectly, allowing us to arrive at a series of observations and conclusions. For example, one is that the almost surrealist handling of the news about the spill and how it was later dealt with undoubtedly honor the field's name, Macondo, which comes from Gabriel García Márquez's classic magical realist novel, *One Hundred Years of Solitude*.

Another more important and less anecdotal issue is that two high risk circumstances came together here: the spill itself and the means used to control it. Plus, the impact can be

CRUDE RESERVES/PRODUCTION RATIO IN MEXICO
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Type of reserve	Volume (billions of barrels of equivalent crude oil)	Projected duration of deposit according to 2010 internal consumption levels (1.378 billion barrels of equivalent crude oil)*
1 P (proven)	14.0	10.2 years
2P (proven + probable)	14.0 + 14.2= 28.2	20.5 years
3P (proven + probable + possible)	14.0 + 14.2 + 14.8= 43.0	31.2 years
3P (total: proven + probable + possible)	43.0	31.2 years

* Round numbers.

Source: "Reservas de hidrocarburos Pemex a enero de 2010," <http://www.ri.pemex.com/index.cfm?action=content§ionID=134&catID=12201>.

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seen in two ways: on deepwater crude production and on the environmental preservation/destruction binomial. As already mentioned, Pemex's reserve/production ratio does not make it imperative to develop these kinds of deposits as soon as possible, above all if we disregard exports.⁷

All of this demonstrates that neither the appropriate technology nor procedures nor experience required for supervision exist. With the current amount and type of information available, specialized bodies and oil companies have been shown to be enormously inadequate. Accusations of indolence and corruption have been leveled at both BP and the Mineral Management Service (MMS), now the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), known as "Bummer," which replaced the MMS because of its damaged reputation and the conflicts of interest that came to light after the spill.

For all these reasons, it is clear that plans for deepwater development in the Gulf of Mexico must be reformulated and redesigned, not just reviewed as some authors suggest. Regarding the environmental destruction/preservation binomial underlined by the media, it is clear that new technology must be developed to prevent damage and, in the last analysis, regenerate anything that is impacted.

CONCLUSION: ACTION PROPOSALS ON DIFFERENT LEVELS

Internationally

Countries with mature deposits and declining reserves will undoubtedly develop all possible deposits, even the most difficult and costly (like those in deep waters) in the near future. For this reason, they must do everything possible to come to agreements with their neighbors about these issues in the framework of international cooperation. One example of this is Maritime Delimitation and Cooperation agreement signed

last September 15 by Norway and Russia about deposits in the Barents Sea.⁸

New technologies must be developed to increase environmental security in everything concerning developing deepwater deposits, whether from platforms or in pipelines, etc., as well as to fight possible spills, given that one of the lessons of the Macondo incident is that the technical and administrative systems used in this kind of development are not yet as trustworthy as needed.

In the Gulf of Mexico

As mentioned above, in this kind of work, international cooperation is needed, above all between neighboring countries. For this reason, undoubtedly some kind of an agreement must be sought among Mexico, the United States, and Cuba as the main countries affected. This could be done bilaterally, although ideally, there would be a multilateral framework to guarantee safe development of the Gulf of Mexico's deepwater deposits and to carry out joint actions in case of a spill.⁹

Nationally

Undoubtedly, one of the lessons learned is that nationalism is a factor that continues to dominate decisions about oil, whether by private or state companies. For that reason, Mexico must display a healthy dose of nationalism that until now the actions of recent federal administrations have not displayed.

On the other hand, it is necessary to continue to systematically follow in detail the effects that with time will undoubtedly be detected in Gulf of Mexico ecosystems, and, if merited, the appropriate legal proceedings stipulated by international law must be brought.

Inside Pemex

For Pemex to display a healthy nationalism, it would have to develop deepwater deposits, but only when necessary and based on internal decisions (production-demand-reserves) and not because of pressure from other countries or multinational corporations. This is all the more the case given the growing cost and complexity of working in deep waters and that some companies, like Devon, have announced their withdrawal from this market.

I think that what is needed is for this kind of exploration and development to be done directly, acquiring and assimilating the technologies needed and not inventing new kinds of contracts that endanger national integrity and oil earnings, among other things, and that have already shown themselves to be inoperative in the past, such as the so-called “multiple services contracts.”¹⁰

Without a doubt, the decline of the Cantarell deposit and others that will begin to wane in the future will make Pemex have to develop Gulf of Mexico deepwater deposits. However, the terms in which they are developed should be reformulated, as should, above all, the technical and ecological conditions that until now had been predicted for them. For example, it will be necessary to redesign the planning of deepwater development regarding the assimilation of technology; security, prevention, and ecological rescue procedures, with an eye to future development. This should be applied in the upcoming Lakach Project.¹¹

Also, Pemex’s Environmental Protection Strategy should be reformulated, particularly the “Strategic Projects” chapter. Although the current chapter mentions that one of Pemex’s new challenges is working in deep waters, it proposes no concrete measures and no project that could protect the environment when this kind of development is underway.

The production strategy should also be reviewed and changed. That is, some of the closed deposits and capped wells should be re-opened, and development should continue along the coasts, both onshore and offshore. It is easier and cheaper to work in shallow waters than to explore in deep waters, and it is estimated that we will have oil for 10 more years. Given that the South and Maritime Southeast regions are where 100 percent of the super-light crude and 90 percent of the light crude is produced, the two together have gone from making up 25 percent of national crude oil production in 2004 to 42 percent in the second quarter of 2010, and it continues to rise. Forty-two percent of natural gas production also came from there in the same quarter.¹²

If the decision were made to decrease, or even cancel, crude oil exports—the latest reserve/production ratio is a matter for great concern since if it continues this way, there would only be enough for 10.2 years—¹³ we would have enough oil to maintain our development for about 28 years.¹⁴

It is also very important to say that a great deal of effort must be put into regulation, since, as has already been shown—and this was recognized by the president of the United States himself—a regulatory body was corrupted.¹⁵ **NM**

NOTES

¹ Pemex, “Mantiene Pemex estable la producción de crudo en los primeros 10 meses del año,” Press Release 90, November 25, 2010, <http://www.pemex.com/index.cfm?action=news§ionID=8&catID=40&contentID=23473>. [Editor’s Note.]

² See “Sin precedente, monitoreo en el Golfo de México; llevará un lustro concluirlo,” *La Jornada*, November 17, 2010, <http://www.jornada.unam.mx/2010/11/17/index.php?section=sociedad&article=048n1soc>. [Editor’s Note.]

³ “Estudio: Químicos letales se extendieron ampliamente tras derrame,” “Democracy Now!” November 3, 2010, <http://www.democracynow.org/es/2010/11/3/titulares#9>. [Editor’s Note.]

⁴ CNN, <http://mexico.cnn.com/mundo/2010/11/02/quimicos-toxicos-se-propagaron-en-un-area-del-derrame-en-el-golfo>, November 2, 2010. [Editor’s Note.]

⁵ Agencia EFE, “Tres estados mexicanos demandaron ante un tribunal de EE.UU. a BP por vertido,” Mexico City, September 30, 2010. [Editor’s Note.]

⁶ “Opinion Section,” *La Jornada* (Mexico City), September 9, 2010, <http://www.jornada.unam.mx/2010/09/09/index.php?section=opinion&article=030a1eco>. [Editor’s Note.]

⁷ For the purposes of an analysis like this, when we talk about reserves, we are referring to three kinds: proven, probable, and possible. Proven reserves are the estimates of crude oil, natural gas, and natural gas liquids about which geological and engineering data point to the reasonable certainty that they can be extracted from known deposits under existing economic and operating conditions by a specific date. Probable reserves are those which analysis suggests are commercially feasible to recover. There must be at least a 50-percent probability that the amounts to be recovered will be equal or greater than those expected. Possible reserves are volumes of hydrocarbons whose commercial recovery is less feasible than that of probable reserves.

⁸ See http://www.noruega.org.mx/News_and_events/Noticias-principales/Acuordo-historico-entre-Noruega-y-Rusia/. [Editor’s Note.]

⁹ Ángel de la Vega Navarro, “Desastre en el golfo: implicaciones para la industria petrolera,” *Energía a debate* no. 39 (July-August 2010).

¹⁰ Antonio Gershenson, “Presupuesto petrolero...donde no hay petróleo,” *La Jornada*, September 30, 2010.

¹¹ In 2006, the Pemex Exploración y Producción company confirmed the potential of the area called Deep Coatzacoalcos, where Lakach lies under 988 meters of water. Today, project design is underway and an investment of about Mex\$21 billion (at 2011 value) is predicted from 2011 to 2023. See <http://www.pemex.com/index.cfm?action=content§ionID=145>. [Editor’s Note.]

¹² See www.pemex.com.

¹³ “Reporte de reservas de Pemex a enero de 2010,” http://www.ri.pemex.com/files/content/DCF_ccw_r09_e%20090319%20nota%20precautoria.pdf. [Editor’s Note.]

¹⁴ Rafael de Celis Contreras, “México no es un país petrolero,” lecture at Mexico’s Chamber of Deputies in September 2010.

¹⁵ Sergio Benito Osorio, “Después de Macondo,” *Energía a debate* no. 39 (July-August 2010).