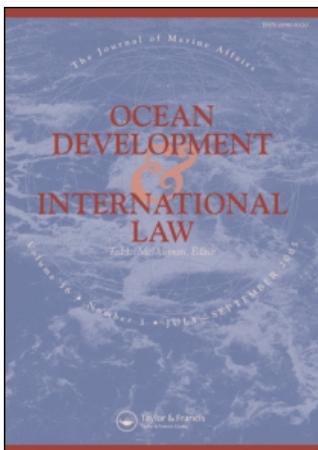


This article was downloaded by:[Texas A&M University]  
On: 30 May 2008  
Access Details: [subscription number 784375697]  
Publisher: Taylor & Francis  
Informa Ltd Registered in England and Wales Registered Number: 1072954  
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Ocean Development & International Law

Publication details, including instructions for authors and subscription information:  
<http://www.informaworld.com/smpp/title-content=t713774325>

### Hydrocarbon Development in the Ultra-Deepwater Boundary Region of the Gulf of Mexico: Time to Reexamine a Comprehensive U.S.-Mexico Cooperation Agreement

Richard J. McLaughlin <sup>a</sup>

<sup>a</sup> Harte Research Institute for Gulf of Mexico Studies, Texas A & M University, Corpus Christi, Texas

Online Publication Date: 01 January 2008

To cite this Article: McLaughlin, Richard J. (2008) 'Hydrocarbon Development in the Ultra-Deepwater Boundary Region of the Gulf of Mexico: Time to Reexamine a Comprehensive U.S.-Mexico Cooperation Agreement', *Ocean Development & International Law*, 39:1, 1 — 31

To link to this article: DOI: 10.1080/00908320701831849  
URL: <http://dx.doi.org/10.1080/00908320701831849>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article maybe used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

# Hydrocarbon Development in the Ultra-Deepwater Boundary Region of the Gulf of Mexico: Time to Reexamine a Comprehensive U.S.-Mexico Cooperation Agreement

RICHARD J. McLAUGHLIN

Harte Research Institute for Gulf of Mexico Studies  
Texas A & M University  
Corpus Christi, Texas

*Finding and exploiting oil and gas resources in the ultra-deepwater areas of the Gulf of Mexico is occurring at an accelerated pace. New discoveries have recently been made in a large geological structure known as the Lower Tertiary Wilcox Trend that is located in the U.S.-Mexico Maritime Boundary Region. However, due to the transboundary characteristics of many of these hydrocarbons, some form of bi-national cooperation is necessary to effectively manage the shared resources, protect the oceanic environment and comply with evolving norms of international law before commercial production can begin. Well-established international customary norms prohibit unilateral exploitation of transboundary oil and gas resources. Consequently, it is important for the two nations to address these issues today rather than putting them off until they become a critical political problem in their bilateral relations.*

**Keywords** continental shelf, Gulf of Mexico, managing transboundary resources, oil and gas, United Nations Law of the Sea Convention, U.S.-Mexico cooperation

## Hydrocarbon Development in the Ultra-Deep Gulf of Mexico

### *Introduction*

Discoveries of hydrocarbon resources in the ultra-deepwater areas of the Gulf of Mexico are occurring at an accelerated pace.<sup>1</sup> A huge new offshore find made public in September 2006 has been projected to boost current U.S. oil reserves by as much as 50 percent.<sup>2</sup> This and a

Received 16 October 2006; accepted 15 March 2007.

The author would like to thank his colleagues at the Harte Research Institute for Gulf of Mexico Studies and the participants of the Law of the Sea Institute Conference hosted by INHA University, Seoul, Korea, October 24–25, 2006 for their helpful comments and support. Special thanks to John Wood for creating the maps used in this article and Edward Gorecki for his research assistance. The views expressed herein are the author's own.

Address correspondence to Richard McLaughlin, Harte Research Institute for Gulf of Mexico Studies, Texas A&M University, Corpus Christi, 6300 Ocean Drive, Corpus Christi, TX 78414. E-mail: Richard.McLaughlin@tamucc.edu

number of other recent major discoveries are generating significant industry interest in the deepest frontier areas along the U.S.-Mexico maritime boundary. However, this optimism must be tempered by the recognition that efficient development and conservation of these important resources will be hindered by the uncertain and confused legal and policy regime currently governing transboundary hydrocarbons in the deepest portions of the Gulf.

This article examines the geographical location and commercial potential of these newly discovered ultra-deepwater production zones. It analyzes evolving customary and conventional legal norms that encourage cooperation in the exploration and exploitation of transboundary hydrocarbon resources such as those found in the maritime boundary region of the Gulf of Mexico. Existing legal and political obstacles to improved collaboration are also highlighted. Additionally, this article reexamines provisions of the Puerta Vallarta Draft Treaty,<sup>3</sup> originally created in 1991, as a potential framework for cooperative management between the United States and Mexico. The article concludes by recommending future actions that will improve the prospects of creating an effective joint development mechanism for transboundary hydrocarbons in the Gulf of Mexico.

### *Status of Ultra-Deepwater Development*

Despite tremendous costs and risks associated with deep-water exploration and production, the United States is encouraging the development of hydrocarbon resources in deeper and more remote parts of the Gulf for a variety of reasons. First, soaring global oil prices make expensive ultra-deep drilling technologies more cost competitive.<sup>4</sup> Second, legal constraints prohibiting offshore exploration in large portions of U.S. coastal waters and diminishing production in existing offshore fields require that more focus be placed on deepwater areas of the Gulf where drilling is allowed.<sup>5</sup> Third, there is a growing and broad-based recognition that the United States is dangerously dependent on energy supplies imported from geopolitically unstable parts of the world and must quickly move to domestic sources of hydrocarbons, alternative fuels, and renewable energy supplies.<sup>6</sup>

Mexico is also aggressively searching for new sources of oil in the deepwaters of the Gulf. Production at its largest producing area, the Cantarell offshore oil field located in the shallow Bay of Campeche, is expected to decline from its current 2.1 million barrels per day to between 1.4 million and 520,000 barrels per day by 2008.<sup>7</sup> The oil industry provides over one third of Mexico's government revenues and any decline in current production levels will likely have dire consequences on the nation's economy.<sup>8</sup> A decline may also impact the United States because it has been suggested that a significant reduction in oil revenues will leave the Mexican government with less money to deal with domestic issues and may prompt more of its citizens to contemplate emigrating north to the United States.<sup>9</sup>

On the positive side, geologic studies have shown that the deepwater and ultra-deepwater areas of the Gulf of Mexico contain huge quantities of hydrocarbons. Industry estimates range as high as 50 billion barrels of crude oil equivalent (BOE).<sup>10</sup> These potential reserves are located on both sides of the U.S./Mexico maritime boundary. The U.S. has drilled more than 900 exploration wells in its portion of the deepwater Gulf during the past decade.<sup>11</sup> The most recent oil and gas lease sale in August 2006 was the best in nine years, with 67 percent of all tracts in water depths of greater than 400 meters.<sup>12</sup>

Much of this industry interest can be attributed to a recent series of important discoveries in a large geological structure known as the Lower Tertiary Wilcox Trend (hereinafter "Wilcox Trend"). During the past five years, more than 12 billion barrels of oil in place have been discovered in this giant 34,000 square mile region that straddles the

maritime boundary between the United States and Mexico.<sup>13</sup> Nine of 13 exploratory wells that have been drilled in the Wilcox Trend have resulted in recoverable oil, an incredible 69 percent success rate.<sup>14</sup>

In contrast, Mexico is just beginning to explore its deepwater regions. It has acquired seismic surveys of promising areas of the Gulf and has drilled a small number of wells out to a depth of about 3,000 feet.<sup>15</sup> One industry analyst, referring to the deepwaters and ultra-deepwaters of Mexico, asserted, "there are not many untouched basins around the world. In fact I can't think of any untouched basins around the world, with such high potential that remain unexplored."<sup>16</sup>

### ***Obstacles to Development***

Despite its extraordinary potential, exploring and exploiting the ultra-deepwater hydrocarbon resources of the Gulf of Mexico present daunting technological and financial challenges. Rigs in the deepest waters carry price tags of between \$1 and \$2 billion, and it costs between \$50 and \$100 million to drill a single well.<sup>17</sup> Despite the tremendous cost and time associated with ultra-deepwater research and development, the potential rewards of discovering a huge play<sup>18</sup> has encouraged so-called major and non-major companies to participate in ultra-deepwater discovery efforts.<sup>19</sup> In addition, financial incentives contained in the 1995 Deepwater Royalty Relief Act (DWRRA) reduce the risks substantially.<sup>20</sup> Through 2005, there have been 219 discoveries in the U.S. Gulf of Mexico in waters deeper than 1,000 feet.<sup>21</sup> Of these discoveries, 49 lie at depths greater than 5,000 feet.<sup>22</sup>

Unlike the United States, Mexico is not currently capable of exploiting hydrocarbon resources in the deeper waters of the Gulf. Mexico's state-run oil company, *Petroleos Mexicanos* (Pemex), has publicly stated that it will need investments of an additional \$15 billion annually to be in a position to develop its ultra-deepwater hydrocarbons.<sup>23</sup> It will also need technical expertise and access to U.S.-based infrastructure, such as pipelines, that are currently controlled by major oil companies. However, efforts to attract foreign participation have been obstructed by Mexico's domestic legal system.

Most importantly, article 27 of Mexico's Constitution provides that the state has "inalienable" ownership of its subsoil resources.<sup>24</sup> This has been interpreted to mean the state cannot sell any part of those resources and prohibits foreign private investment in any type of joint venture or partnership with Pemex.<sup>25</sup> Citing article 27, a number of international oil companies have rejected Pemex's offers to bid on contracts relating to its ultra-deepwater exploration activities. According to these oil company officials, the contracts "do not recognize the high cost and high risk of deep water."<sup>26</sup> Informed observers believe it is unlikely that Mexico will be able to acquire the investments and technology it needs to develop its ultra-deepwater hydrocarbon reserves in the absence of significant legal reform relating to foreign participation in the nation's oil and gas industry.<sup>27</sup>

Technological advancements and market conditions have finally reached a point in which production of hydrocarbons in the ultra-deepwater U.S.-Mexico boundary region of the Gulf of Mexico is commercially feasible. However, before actual production begins, both nations must ensure that their activities are in strict compliance with the principles of international law and in conformance with evolving standards of environmental stewardship. Taking into account the transboundary characteristics of many of these hydrocarbons, some form of bi-national cooperation is necessary to effectively manage the shared resources, protect the oceanic environment, and comply with evolving norms of international law.<sup>28</sup> It is important that the United States and Mexico address these issues today rather

than putting them off until they become a critical political problem in their bilateral relations.

### *Need to Reevaluate the Puerto Vallarta Draft Treaty*

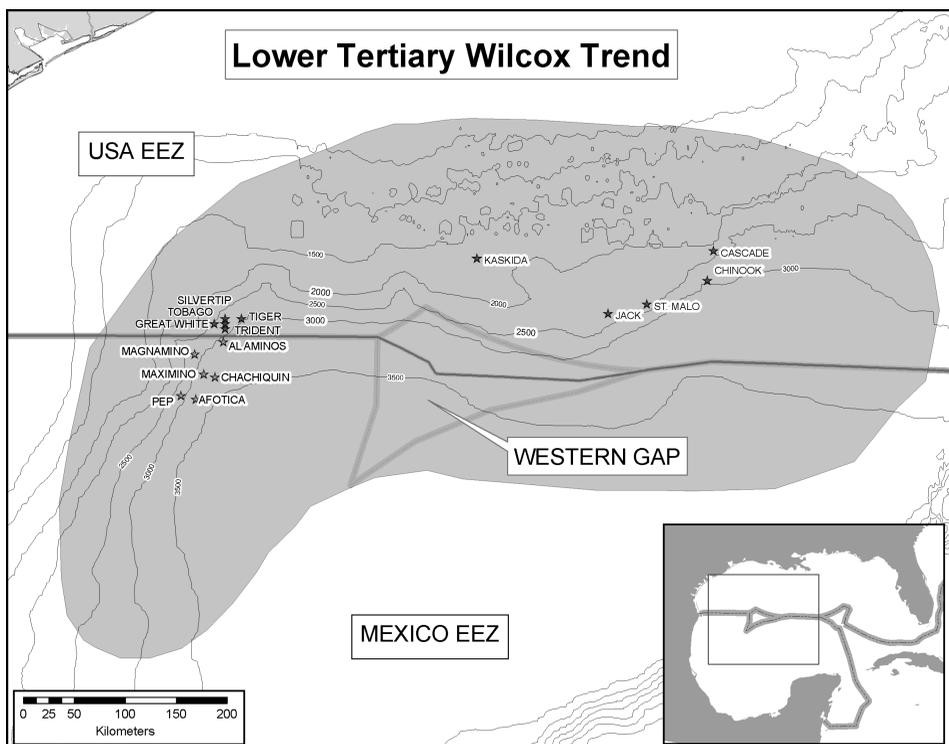
The economic potential of the hydrocarbon resources in the maritime border region of the Gulf as well as the benefits of their collaborative management have been recognized for many years.<sup>29</sup> In fact, in 1991, a group of distinguished scholars produced the model Puerto Vallarta Draft Treaty (PVD Treaty) to assist the two nations to better coordinate transboundary oil and gas development in the Gulf of Mexico.<sup>30</sup> A detailed examination of this draft treaty is provided in Part E.

The purpose of the PVD Treaty was to “prevent future conflicts in maritime hydrocarbon-producing areas and to promote harmonious exploitation by both national parties.”<sup>31</sup> The Treaty represented a very important initial effort at developing a conventional legal regime to coordinate the hydrocarbon development activities of two nations with totally different legal philosophies in the field of natural resources.<sup>32</sup> Mexico’s legal regime provides for exclusive state participation in all aspects of natural resource exploration and exploitation.<sup>33</sup> In contrast, the United States allows private participation of any nationality through leasing policies and governmental regulation.<sup>34</sup> The PVD Treaty recognized these differences and attempted to integrate both systems into its framework provisions.<sup>35</sup>

Sadly, the PVD Treaty did not receive the attention that it deserved from policymakers in either the United States or Mexico. Several things probably contributed to this lack of interest, including the fact that the existence of significant quantities of hydrocarbons was not confirmed until exploratory wells were drilled in the ultra-deepwater maritime boundary region in the early 2000s.<sup>36</sup> Prior to that, all predictions of the size and quality of reserves were speculative and lacked any need of urgent attention. Second, commercial production, if it were to occur at all, was viewed as decades away because of the water depth and remoteness of the resources and because of the depressed price of oil and gas at the time.<sup>37</sup> Third, it is broadly assumed by policymakers that political controversy will inevitably accompany any effort that may be perceived as weakening the sovereign authority of Mexico to assert exclusive control over its natural resources within its territory and that such controversy should be avoided.<sup>38</sup> Fourth, at the time of the PVD Treaty, there was probably an assumption that any hydrocarbon reservoirs that actually straddled the international boundary did not warrant significant attention because they were inconsequential in size compared to those reservoirs that were located entirely within the territories of each nation.

A variety of events that have occurred since the early 1990s, when the PVD Treaty was drafted, strongly counter these assumptions. For example, growing economic, political, and national security pressures in the United States and Mexico that call on the nations to rapidly develop the hydrocarbon resources in ultra-deep areas of the Gulf coupled with evolving changes in the normative content of international law create incentives for cooperation that were not in place when the PVD Treaty was first published 15 years ago. Significant new discoveries of hydrocarbons in the Perdido Foldbelt and Walker Ridge plays of the Wilcox Trend, which straddles the U.S.-Mexico maritime boundary, also accelerate the need for cooperation<sup>39</sup> (see Figure 1).

Moreover, international law mandates that the nations collaborate in the management of the “Western Gap,” a legally distinct portion of the Wilcox Trend that is located beyond the 200-mile Exclusive Economic Zones of the two nations.<sup>40</sup> In 2000, the U.S. and Mexico completed a treaty that divided the Western Gap between them and created a unique 2.8



**Figure 1.** Wilcox Trend (based on MMS, Deepwater Gulf of Mexico 2006: America's Expanding Frontier p. 12).

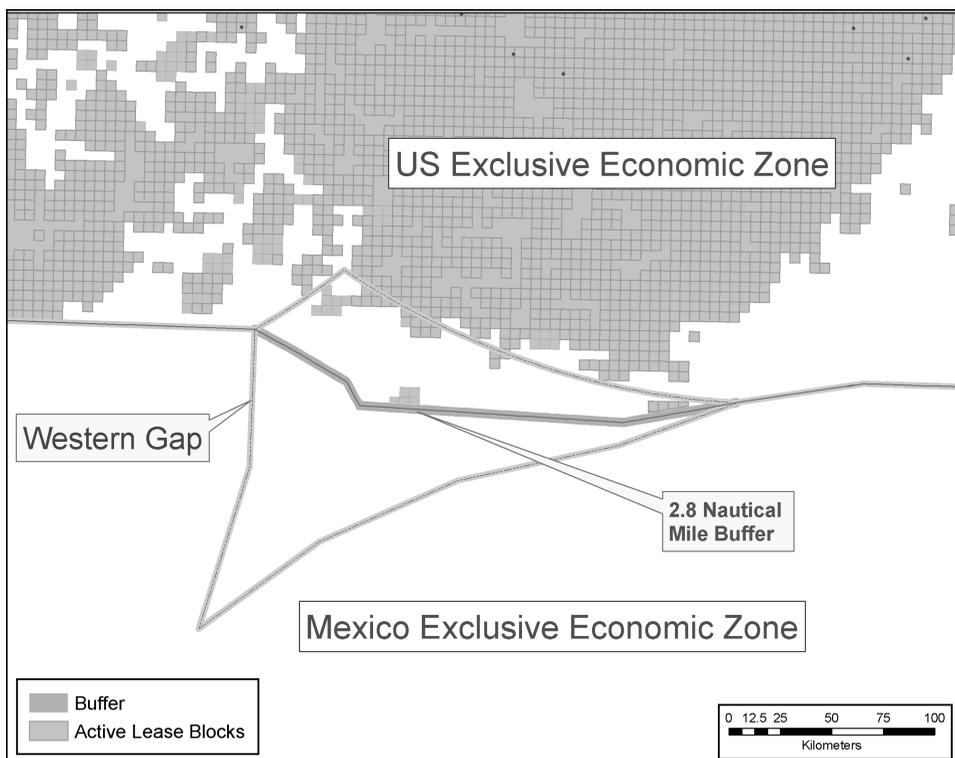
nautical mile-wide buffer zone containing straddling pools of oil and gas<sup>41</sup> (see Figure 2). This article will argue that in light of these changed circumstances there is now an urgent need for the United States and Mexico to cooperate in the management of transboundary hydrocarbon resources and that it would be helpful to reexamine the PVD Treaty as a foundation for future negotiations.

## Description of the Transboundary Hydrocarbon Resources in the U.S.-Mexico Maritime Boundary Region

### *Wilcox Trend*

The Wilcox Trend is a geologic formation that underlies much of the Gulf of Mexico's maritime boundary region. The Trend contains a thick hydrocarbon-rich sand section deposited in the Lower Tertiary period (from 66 to 38 million years ago). Most of the oil produced to date in the Gulf of Mexico is trapped in deposits from the later Miocene period (24 million years and later).<sup>42</sup> Commercially viable reserves in the older and deeper rocks of the Lower Tertiary period were only recently discovered and promise even more play potential than Miocene deposits.<sup>43</sup>

These Lower Tertiary reservoirs are located in some of the deepest waters in the Gulf ranging from about 6,000- to 10,000-foot depth. Tapping into these Lower Tertiary reservoirs will require wells of 30,000-foot depth or more. Despite the technological



**Figure 2.** Western Gap buffer zone and leases.

difficulties and high costs associated with drilling in such deep and remote areas, industry analysts believe that existing appraisal wells indicate sufficient commercial potential to warrant the high costs.<sup>44</sup>

An important feature of the recent discoveries on the Wilcox Trend is that they are widely dispersed over the entire geologic structure, a distance of several hundred miles or more. Major discoveries are located from the Walker Ridge area in the eastern portion to the Alaminos Canyon area in the far western portion. Another recent discovery, the Kaskida well, yielded the second-thickest oil bearing zone ever found in the Gulf of Mexico.<sup>45</sup> Kaskida is located roughly in the middle of the Wilcox Trend in Keithley Canyon. These initial efforts indicate that many additional discoveries in the region, on both sides of the international boundary, are likely in coming years.

The larger Wilcox Trend contains two especially important plays, the Perdido Foldbelt and the Walker Ridge.

*Perdido Foldbelt.* Located about 125 miles east of the South Texas mainland near the U.S.-Mexico maritime boundary is an especially promising ultra-deep water area known as the Perdido Foldbelt. This foldbelt is a series of northeast-southwest trending anticlines that are a deep basin component of the Wilcox Trend.<sup>46</sup> To date, there have been more than six major discoveries in the Alaminos Canyon region of the Perdido Foldbelt, containing a combined one billion BOE or more.<sup>47</sup> Over 20 years ago, petroleum geologists identified the Perdido Foldbelt as likely containing the largest and most attractive structural traps for significant quantities of oil and gas in the deepwater regions of the Western Gulf of

Mexico.<sup>48</sup> Recent discoveries have justified those predictions and have placed the play at the forefront of ultra-deepwater exploration regions.

The Perdido Foldbelt extends south more than 100 miles beyond the U.S.-Mexican maritime boundary. Given the declining opportunities in its existing shallow-water offshore fields, Mexico has asserted that production from ultra-deep water is an important part of its energy future.<sup>49</sup> After undertaking extensive 3D seismic surveys and drilling three wildcat wells of the area, Pemex recently announced that it will drill 11 exploratory wells near the U.S.-Mexico border opposite the prolific Alaminos Canyon group of discoveries on the U.S. side<sup>50</sup> (see Figure 1).

Production of hydrocarbons in the ultra-deep waters of the Perdido Foldbelt is significantly hindered by the lack of supporting infrastructure in this remote part of the Gulf. Shell Offshore plans to begin production on the Great White, Tobago, and Silvertip discoveries in 2010.<sup>51</sup> The nearest pipelines are about 50 miles away at ExxonMobil's Hoover-Diana complex and there are no immediate plans to expand this infrastructure south to service the Alaminos Canyon discoveries.<sup>52</sup> Some observers have speculated that this region could be the location of the Gulf of Mexico's first floating, production, storage, and offloading vessel (FPSO), which would alleviate the need for pipelines.<sup>53</sup> However, no public announcements have been made regarding any plans for a FPSO and there has been no request to the Minerals Management Service for a permit.<sup>54</sup>

Complying with customary and conventional norms of international law may also impede the development of these transboundary offshore oil and gas fields. The Perdido Foldbelt straddles the U.S.-Mexico maritime boundary and it is currently unclear precisely what rights and obligations each nation has regarding ownership and management of the transboundary fugacious resources located on its side of the boundary.<sup>55</sup> Unlike most natural resources, transboundary fugacious resources may be located in one nation one day, but migrate to another nation on the next. For example, the United States may pump oil from a transboundary pool, causing the oil to migrate across the boundary and thereby deprive the co-owning nation, Mexico, of its potential share of the resource.<sup>56</sup>

*Walker Ridge.* The second major ultra-deepwater play in the Wilcox Trend is Walker Ridge. To great public fanfare, industry representatives announced in September 2006 that potentially massive amounts of hydrocarbons are located in the Walker Ridge play.<sup>57</sup> Successful flow tests showing 6,000 barrels of crude oil a day from the Jack II well alone have been touted as the largest new domestic source of oil since the discovery of the Alaska's North Slope more than 30 years ago.<sup>58</sup> Analysts have estimated that the Walker Ridge finds could boost the nation's current reserves of 29.3 billion barrels by 50 percent.<sup>59</sup> Just as in the Perdido Foldbelt, it is unclear how many years it may take before sufficient supporting infrastructure is extended to this portion of the Gulf of Mexico to permit full commercial production. However, the Cascade project is scheduled to begin commercial production in 2009, becoming the first Wilcox Trend discovery to come on line.<sup>60</sup>

While existing wells located in the Walker Ridge are not as close to the boundary with Mexico as those in the Perdido Foldbelt, it is likely that future discoveries will be made in areas much closer to the border. Consequently, there are important reasons to begin to plan for the possibility of transboundary reservoirs on the eastern portion of the Wilcox Trend, just as in the Perdido Foldbelt to the west.

*Western Gap.* A third transboundary region of the Gulf of Mexico that is receiving increased attention from the international oil and gas industry is the area known as the "Western Gap," which lies on the Wilcox Trend approximately halfway between the Yucatan Peninsula and

the coast of Texas. The Western Gap is a region slightly smaller than the State of New Jersey that falls outside of the 200-mile exclusive economic zones (EEZs) of the United States and Mexico. Geological surveys suggest that favorable conditions exist for the occurrence of oil and natural gas resources in many parts of the Western Gap region.<sup>61</sup> Because of its unique international location and hydrocarbon potential, access to the Western Gap is of extreme importance to both nations for legal, economic, environmental, and national security purposes.

International law provides exclusive coastal state dominion and control over the seabed resources of the continental shelf beyond 200 miles.<sup>62</sup> After scientific studies provided evidence that the Gap qualifies as part of each nation's extended continental shelf, the United States and Mexico engaged in negotiations to divide the area between them.<sup>63</sup>

International legal concerns prevented either nation from attempting to explore or exploit the petroleum resources of the Western Gap until they finalized negotiations on the Delimitation Treaty that claimed the region as an extension of each nation's continental shelf and defined the boundary.<sup>64</sup> Treaty negotiations were premised on the assertion by both nations that all of the seabed and subsoil of the submarine areas beyond the 200-mile EEZ met the legal requirements described in Article 76 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS).<sup>65</sup>

The Delimitation Treaty, signed on June 9, 2000, gave Mexico access to about 62 percent of the Western Gap, while the United States retained about 38 percent.<sup>66</sup> The treaty also established a 2.8-nautical mile buffer zone along the new boundary to account for the possibility that straddling oil and gas reservoirs may be located there.<sup>67</sup> The nations agreed to a ten-year drilling moratorium in the buffer zone while the geological characteristics of the area can be surveyed.<sup>68</sup> During the ten-year moratorium period the two nations "shall meet periodically for the purpose of identifying, locating and determining the geological and geophysical characteristics of such reservoirs."<sup>69</sup> The drilling moratorium automatically expires ten years following the entry into force of the treaty unless the Parties modify the period by an exchange of diplomatic notes.<sup>70</sup> Should the moratorium expire, exploitation of the resources in the buffer zone is still subject to significant restraints pursuant to customary international law.<sup>71</sup>

Since 2000, nearly forty ultra-deepwater oil and gas lease tracts have been acquired by a variety of U.S. and international companies on the U.S. side of the Western Gap (see Figure 2). Interestingly, a substantial number of these leases adjoin the 2.8 nautical mile-wide buffer zone and are subject to the 10-year drilling moratorium.

Despite its huge potential as part of the oil-rich Wilcox Trend, developing the resources of the Western Gap faces more than technological obstacles. Significant legal and policy uncertainties also confront companies that seek to exploit the region's hydrocarbons. Moreover, there is no precedent for oil production along an international maritime boundary on the extended continental shelf such as in the 2.8-mile buffer zone that separates the United States and Mexico in the Western Gap. Consequently, those seeking to manage and develop the resources of the Western Gap will face a challenging and unmarked trail.

The U.S.-Mexico Maritime Boundary region including the Perdido Foldbelt, Walker Ridge, and Western Gap contains hydrocarbon resources of immense importance to the two nations. Yet, proper management and production of these resources will be severely hampered by a variety of legal and policy impediments that await resolution. Resolving many of these impediments will only be possible through the collaborative efforts of both nations.

It is the contention here that the U.S. and Mexican governments need to take a more proactive and collaborative approach toward managing the transboundary hydrocarbon

resources in the deep waters of the Gulf of Mexico. Efforts beyond those put forward by private sector interests need to be examined. If successful, rather than an arena for competition and legal strife, the U.S.-Mexico Maritime Boundary Region can serve as a model of cooperative management. Such a model would benefit both nations and serve as a useful guide for the rest of the international community.

## **International Law and Transboundary Offshore Hydrocarbon Fields**

### *International Customary Law*

Customary international law constitutes a primary basis for cooperation in the exploration and exploitation of transboundary resources. Well-established customary norms place an obligation on states to prevent activities that may cause damage to the legitimate rights and interests of other states.<sup>72</sup>

Nations that share transboundary fugacious resources such as oil and gas have long recognized the danger of the so-called rule of capture approach to allocating ownership and, conversely, the benefits of cooperative management and exploitation.<sup>73</sup> For example, by 1986, about 40 nations that share offshore transboundary hydrocarbon resources had adopted agreements of cooperative management and exploitation.<sup>74</sup> Although the precise perimeters under customary international law of this obligation to cooperate is still evolving, the absolute ownership or sovereignty over the shared resource granted under the traditional rule of capture has been unambiguously rejected as both wasteful and inequitable and has been replaced.<sup>75</sup>

It is still too early in the progressive development of any customary rule to determine whether nations that share transboundary oil and gas fields are obligated to adopt certain cooperative mechanisms, such as joint development or unitization agreements before exploitation can begin.<sup>76</sup> However, David Ong, in his comprehensive study of the status of customary law and shared offshore hydrocarbon deposits, summarized the existing customary rules as follows:

First, there is an established obligation to cooperate in reaching agreement on the exploration and exploitation of transboundary deposits. Second, in the absence of such an agreement, there is an obligation to exercise mutual restraint with respect to the unilateral exploitation of the resources.<sup>77</sup>

According to Ong, while unilateral exploitation is strictly prohibited, even exploration is subject to a general obligation to notify, inform, and consult the other interested states in good faith because exploratory drilling can be construed as representing irreparable prejudice to the interests of other states.<sup>78</sup> This duty to notify and inform is “triggered by the detection of a common deposit, and is to be followed by mutual consultations on the most effective or optimum way to exploit the resources concerned without damaging the legitimate interests of the other interested states.”<sup>79</sup>

### *UNCLOS and Mutual Restraint*

Mutual restraint in the absence of a cooperative agreement to explore and exploit hydrocarbon resources is strengthened further by Articles 81, 78, and 56 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS).<sup>80</sup> Mexico has signed and

ratified UNCLOS.<sup>81</sup> The United States, in contrast, is not a party to UNCLOS, although it claims that that most of the Convention represents international customary law.<sup>82</sup> Despite broad consensus in favor of acceding to UNCLOS, up to now a small number of U.S. Senators, using special procedures of the institution, have kept the convention from being voted on by the full Senate.<sup>83</sup> It is unclear how long the United States will remain outside of UNCLOS due to this ongoing political stalemate.<sup>84</sup>

UNCLOS Article 81 grants each coastal state the exclusive right to authorize and regulate drilling on the continental shelf for all purposes. This exclusive right prevents a state from relinquishing its sovereign rights to the minerals in place in its continental shelf or exclusive economic zone if it fails to explore or exploit those resources or remains inactive after another state requests that it cooperate in determining the perimeter or contents of the deposit.<sup>85</sup>

UNCLOS Articles 78 (dealing with the continental shelf) and 56 (dealing with the exclusive economic zone) further support the notion of mutual restraint by requiring the coastal states to exercise due regard to rights and duties of other states and to act in a manner compatible with the provisions of the Convention. In light of the numerous provisions in UNCLOS that provide coastal states with the sovereign right to exclusively explore and exploit the nonliving resources of the EEZ and continental shelf, mutual restraint over the unilateral exploration and exploitation of transboundary hydrocarbons is obvious.

Moreover, UNCLOS article 300 requires that "States Parties shall fulfill in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right." Interpretation of this article is open to conjecture. However, it has been suggested that it should be read to restrict both the unnecessary and arbitrary exercise of rights, jurisdiction, and freedoms, as well as the misuse of powers by states parties.<sup>86</sup> Failing to exercise mutual restraint and to unilaterally explore and exploit transboundary hydrocarbons may be viewed as a violation of good faith or as an abuse of rights.

### ***Enclosed and Semi-enclosed Seas under UNCLOS***

The Gulf of Mexico qualifies as a semi-enclosed sea under UNCLOS article 122.<sup>87</sup> Article 123 provides that "States bordering an enclosed or semi-enclosed sea should co-operate with each other in the exercise of their rights and in the performance of their duties." Despite the hortatory nature of the duty to cooperate under Article 123 by the use of the word "should" rather than "shall," it has been interpreted as requiring states with interests in a common resource, such as transboundary hydrocarbons, to negotiate in good faith with a view to concluding an agreement when their interests collide.<sup>88</sup> Article 123 contains additional obligations to cooperate in the conservation of marine living resources, protection of the marine environment, and coordination of marine scientific research.<sup>89</sup> Development of hydrocarbon resources is not included among this list of activities subject to heightened obligation. However, it has been suggested that there would be no reason a principle enjoining cooperation in respect to the management of common marine resources in semi-enclosed seas would be included in UNCLOS at all if it was meant to establish no legal effect but only a moral obligation.<sup>90</sup> At the very least, UNCLOS provides additional impetus to the view that mutual restraint regarding transboundary hydrocarbons in the U.S.-Mexico maritime boundary region is required and that additional steps toward cooperatively managing those resources must be undertaken prior to exploration or exploitation.

### ***Unity of a Common Hydrocarbon Deposit***

The purpose of international customary and conventional legal obligations to cooperate in the development of hydrocarbons that straddle boundaries between states is to preserve of the “unity of deposit.”<sup>91</sup> One commentator has described the problem associated with protecting the unity of deposit as follows:

These deposits are characterized by a complicated “equilibrium of rock pressure, gas pressure and underlying water pressure,” so that extracting natural gas or petroleum at one point unavoidably changes conditions in the whole deposit. One possible result is that other states cannot extract the minerals from their part of the deposit, even if the first state has extracted only that portion originally situated in its territory or continental shelf.<sup>92</sup>

Protecting the unity of deposit through cooperative measures such as joint development and transboundary unitization balances efficient exploitation with the inherent, sovereign rights of coastal states over natural resources on their continental shelves.

Estimates of reservoir volume and size for purposes of protecting the unity of deposit are difficult to determine and depend on a range of geological and engineering factors. While seismic studies can provide loose estimates, the only way to estimate a reservoir with precision is to drill on both sides of the boundary and to share and compare the resulting well data.<sup>93</sup> Further technical complexity arises from the fact that deposits are not homogeneous or of equal value throughout.<sup>94</sup>

In the Gulf of Mexico, the unity of deposit in the Western Gap has already been estimated to the satisfaction of the government parties as falling within the 2.8-nautical mile buffer zone.<sup>95</sup> Whether the parties will still accept the buffer zone after more appraisal and development work is conducted remains to be seen.

In contrast, the unity of deposit along the U.S.-Mexico boundary in the Perdido Foldbelt region is more problematic. Given the geological and geographical continuity of the deposits, more studies and exploratory drilling will be required to determine the precise perimeters of the unity of deposit. As exploration continues closer to the boundary, greater political, economic, and legal urgency will be placed on precise determinations of unity of deposit in the region.<sup>96</sup>

## **Western GAP—Extending Continental Shelves Beyond 200 Miles Under Article 76 of UNCLOS**

### ***Procedures for Extending Continental Shelves Beyond 200 Miles***

Troublesome legal questions confront coastal states that seek to extend their continental shelves beyond 200 miles. This observation is especially true regarding the international legal status of the Western Gap. Unique geological characteristics of the region coupled with the fact that the United States is not a state party to UNCLOS make claims of jurisdiction complicated. The United States and Mexico will need to resolve these issues prior to oil and gas production beginning on either side of the boundary.

As a result of President Truman’s famous Proclamation in 1945, the United States became the first nation to assert “jurisdiction and control” over the natural resources of its continental shelf.<sup>97</sup> Prior to this assertion the continental shelf merely defined a particular geologic feature and had no independent legal status. However, within a short period other

nations also asserted jurisdiction over their adjacent continental shelves and the practice was substantially codified in the 1958 Convention on the Continental Shelf.<sup>98</sup> The United States and Mexico are parties to the 1958 Convention, which provides in Article 1 that the continental shelf of a coastal state extends beyond a depth of 200 meters to “where the depth of superjacent waters admits of the exploitation of the natural resources” of the shelf.<sup>99</sup> This ambiguous definition of the limits to the continental shelf based on the notion of exploitability proved unsatisfactory and was superseded by Article 76 of UNCLOS.

UNCLOS Article 76 radically changed the extent of each coastal state’s continental shelf by expanding the minimum outer limit of the legal continental shelf to 200 nautical miles offshore, even if the geologic continental shelf did not extend that far.<sup>100</sup> Moreover, UNCLOS allowed extension of the coastal state’s continental shelf beyond 200 miles if certain criteria relating to the geologic continental shelf, slope, and rise extends farther than 200 miles.<sup>101</sup>

Coastal states are to submit evidence to the Commission on the Limits of the Continental Shelf (CLCS), which “shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf.”<sup>102</sup> Establishment of the CLCS was part of the political compromise reached during the Law of the Sea negotiations that ultimately allowed some nations to claim continental margin areas beyond 200 miles. As part of this compromise, coastal states are required to make payments or contributions to the International Seabed Authority if they exploit nonliving resources on the continental shelf beyond 200 miles.<sup>103</sup>

Originally, submissions to the CLCS were to take place “as soon as possible, but in any case within 10 years of the entry into force of this Convention for that State.”<sup>104</sup> Some delegations began to express concerns regarding the difficulty of complying with this time limit.<sup>105</sup> Among other arguments, they pointed out that the CLCS did not adopt its Scientific and Technical Guidelines until May 13, 1999. Consequently, they argued that the 10-year period specified in Article 4 of Annex II should not begin until that later date. After extensive discussions, it was decided by the Meeting of the States Parties that May 13, 1999 should be the date of commencement of the 10-year period for making submissions to the CLCS for a state for which the Convention entered into force.<sup>106</sup> Consequently, the current situation provides for submissions before May 13, 2009 or within 10 years of a state’s ratification of or accession to UNCLOS.

The submission requires information on the natural prolongation by the use of either of two formulae. A distance formula allows an extension 60 miles from the base of the foot of the continental slope,<sup>107</sup> or a sediment-thickness formula allows an extension to “a distance where the thickness of the sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope.”<sup>108</sup>

Coastal states must go through an expensive and time-consuming process of collecting and analyzing detailed bathymetric and seismic data to satisfy the requirements of UNCLOS Article 76.<sup>109</sup> Scientific and technical guidelines were adopted by the CLCS in 1999 to assist coastal states in making submissions.<sup>110</sup> Article 76(8) provides that the CLCS “is to make recommendations to coastal States on matters related to the establishment of the outer limits of the continental shelf.”<sup>111</sup> It goes on to state, “[t]he limits of the shelf established by a coastal State *on the basis of* these recommendations shall be final and binding (*italics added*).”

It is currently unclear what responsibilities the submitting State has once it receives “recommendations” by the CLCS. Nor is it precisely clear what is meant by the term “on the basis of” these recommendations. UNCLOS Annex II, which establishes the governing framework for the CLCS, provides that a coastal state that disagrees with a recommendation

is to make a new submission to the CLCS.<sup>112</sup> However, it is hard to predict how this potential ping-pong match of submission/recommendation/resubmission between a submitting state and the CLCS should end if a serious disagreement over a recommendation emerges.

There is no question that coastal states, rather than the CLCS, have the final say on the outer limits of their continental shelves.<sup>113</sup> Accordingly, the main purpose of the CLCS is to provide guidance to coastal states to assist them in properly complying with the requirements contained in Article 76.<sup>114</sup> Although the CLCS may communicate to the international community that a particular submission is not in accordance with Article 76, it does not have the competence to assess whether the coastal state has properly established the outer boundaries of the continental shelf beyond 200 miles.<sup>115</sup> It is up to individual states, the international community, or even the International Seabed Authority to decide whether to accept or challenge the outer continental shelf boundary proclaimed by a particular coastal State.<sup>116</sup> Despite the CLCS's limited authority, the Commission's role in legitimizing or de-legitimizing a claim made by a coastal state should not be underestimated.<sup>117</sup>

Finally, there is an important caveat in Article 76(10) and paragraph 5(a) of Annex I of the Rules of Procedure, which is intended to prevent the Commission from examining a submission where a land or maritime boundary dispute exists.<sup>118</sup> This sensitivity to the sovereign rights of nations to determine their maritime boundaries is not present in regards to the Western Gap because no maritime dispute exists between the United States and Mexico.<sup>119</sup>

### ***Article 76 and the Western Gap***

Every coastal state is entitled to the continental shelf throughout the natural prolongation of its land territory or to a distance of 200 miles.<sup>120</sup> These rights are an inherent aspect of each state's sovereignty and do not depend on occupation or any express proclamation by the coastal state.<sup>121</sup> It is ultimately the coastal state that establishes the outer boundary of its continental shelf. Nevertheless, submitting a claim to the CLCS serves an extraordinarily important purpose of assuring the international community that a nation's claim complies with Article 76 as well as removing the threat that the claim will be legally or politically challenged as illegitimate.<sup>122</sup>

Regarding the Western Gap, Mexico is required to make its submission to extend its continental shelf by May 13, 2009 because it became a states party to UNCLOS prior to May 13, 1999. In contrast, the latest date that the United States would be required to submit its claim is 10 years after it accedes to the Convention.

Mexico has made no public statements regarding its preparations or schedules for its CLCS submission, but there is every reason to believe that it intends to meet its May 13, 2009 deadline.<sup>123</sup>

It can be assumed that it will rely on UNCLOS article 76(4)(i) as authority for its submission. This assumption is based on seismic and geological studies of the bathymetry of the Gulf of Mexico basin that characterize it as a "geological continuum" that is a natural prolongation of the continental shelves of both the United States and Mexico.<sup>124</sup> Beginning in the 1990s, to the surprise of the U.S. and Mexico's scientific communities, geological studies indicated that deep sediments have gradually covered the Gulf basin from continental shelves and slopes to the abyssal plain, including the Western Gap region.<sup>125</sup> These sediments are thickest in the deepest part of the Gulf basin due to the force of gravity. The thickness of the sediments (many miles deep in places) seems to satisfy the requirement in UNCLOS article 76(4)(i), which requires that the "thickness of the sedimentary rocks

is at least 1 percent of the shortest distance from such point to the foot of the continental slope.”

It is unknown how far along Mexico is in preparations for its 2009 submission to the CLCS. However, a desktop study commissioned by the U.S. government supports a finding that the Western Gap qualifies as an extension of the continental shelves of the United States and Mexico under the criteria contained in UNCLOS Article 76(4)(i). According to the study,

With a well-defined FOS [foot of slope], and given the very thick sediments in the area, there should be no question that all of the area outside of the present U.S. EEZ out to the Mexican EEZ is claimable by the U.S. or Mexico according to Article 76.<sup>126</sup>

This assertion is based on existing information and further geophysical and bathymetric data must be collected in the Gulf of Mexico before the United States will be in a position to properly make a submission to the CLCS.<sup>127</sup>

### ***Benefits of U.S.-Mexico Collaboration in the Western Gap***

Although initial scientific studies indicate that the two nations will be able to satisfy Article 76(4)(i) due to the tremendous thickness of sediments in the deep Gulf basin, problems may still emerge given the potential difficulty in precisely measuring sediment distribution. The famed geologist, Hollis Hedberg, suggested that the so-called Irish Proposal,<sup>128</sup> which eventually was incorporated as article 76(4)(i), was technically impracticable. Hedberg expressed the following concerns:

[B]ecause of the irregularity of sediment distribution in the oceans, the very gradual changes in thickness in many areas, the difficulty of conclusively determining the true base of the sedimentary column due to interbedding of igneous and sedimentary rocks, and the technical impediments to accurate measurement of sediment thickness, this proposal would be too impracticable in application to deserve serious consideration.<sup>129</sup>

Clearly, the delegates to UNCLOS were not as concerned about the impracticability of the Irish Proposal as Hedberg or they would not have incorporated it into the Convention. Nevertheless, problems associated with the issue of determining sedimentary thickness continue to raise concerns. For example, the CLCS has invoked the principle of continuity in its application of Article 76(4)(1). This requires specific documentation of the continuity between the sediments at each fixed point and the sediments at the foot of the continental slope. The Commission has refused to accept calculation of average distribution of sediments as a solution to the problem of complex and irregular topography.<sup>130</sup>

At this point, there is no particular reason to believe that the ambiguity associated with irregular topography and uneven deposits of sediments may pose problems when Mexico and/or the United States submits their respective claims to the CLCS. However, the stakes for both nations in legitimizing their claims to the Western Gap are huge. Any controversy over the legitimacy of either nation's claim may place at risk the legal standing of the 2000 Delimitation Treaty and the oil- and gas-leasing regime that is currently in place. For example, should any questions be raised concerning the scientific legitimacy of Mexico's

CLCS submission, some states parties to UNCLOS may renew their former position that the Western Gap falls outside of national jurisdiction and is part of the “International Area” subject to the common heritage of humankind.<sup>131</sup> This scenario would create legal uncertainty and significantly disrupt ongoing efforts by U.S. leaseholders to explore existing lease blocks in the Gap.<sup>132</sup>

In light of the important benefits that a successful CLCS submission by Mexico would bring to both nations, it would be in their joint interests to closely cooperate in efforts to collect scientific data for purposes of meeting the article 76 obligations as well as to collaborate on a unified approach in making their submissions to the Commission.

### ***Obstacles to Collaboration***

The greatest obstacle to collaboration between the United States and Mexico in efforts to extend their respective continental shelves in the Western Gap is the fact that the United States is not a state party to UNCLOS. Joint submissions to the CLCS by states’ parties with adjoining continental shelves are an option under Article 76. Collective submissions help to reduce costs, provide uniformity, and improve political relations. In May 2006, France, Ireland, Spain, Great Britain, and Northern Ireland collectively prepared a joint submission to the CLCS on the extended continental shelf in the Celtic Sea and Bay of Biscay area.<sup>133</sup> As a non-states party, the United States has foreclosed any opportunity to engage in a joint submission with Mexico.<sup>134</sup>

It is clear that the United States has the sovereign authority to unilaterally extend its continental shelf beyond 200 miles in the Gulf of Mexico and that the CLCS is not competent to assess whether a coastal state has established its outer limits of the continental shelf, as this falls within the sovereign authority of claiming and non-claiming individual states.<sup>135</sup> Nevertheless, because other states can react and either accept or not accept the limit established, the recommendations by the CLCS will likely still have important legal and political consequences. As long as the United States remains outside of UNCLOS it is unlikely to gain the sanctity and legitimization yielded by a positive recommendation of its claim by the CLCS, either jointly with Mexico or unilaterally.

The United States government has officially stated that it does not need the imprimatur of the CLCS to claim the extended continental shelf in the Western Gap because Article 76 reflects international customary law.<sup>136</sup> Consequently, as long as it bases its claim on criteria in Article 76, there is no reason to bring a submission to the CLCS until 10 years after it accedes to the Convention, nor does it need to comply with the revenue-sharing provisions in Article 82 until it accedes.<sup>137</sup> However, these U.S. assertions are open to question. It is in the interest of both Mexico and the United States and the private sector leaseholders to answer these questions and to create a stable legal environment in the Western Gap.

There have been objections to the assertion that Article 76 represents international customary law since the earliest days of UNCLOS. Conference President, Tommy Koh, in his statement at the final session of the Conference, said:

Even in the case of article 76 on the continental shelf, the article contains new law in that it has expanded the concept of the rise. This concession to the broad margin states was in return for their agreement for revenue-sharing on the continental shelf beyond 200 miles. It is therefore my view that a State which is not a party to this Convention cannot invoke the benefits of article 76.<sup>138</sup>

Other commentators have observed that while continental shelf claims consistent with Article 76 are likely compatible with customary law, use of the procedures and mechanisms of the CLCS are new and do not reflect customary norms.<sup>139</sup> It has been argued by some authors that nothing in the Convention precludes non-parties from making a submission to the Commission.<sup>140</sup> In fact, the Commission had requested a legal opinion on whether it could respond to submissions by non-parties to the Convention. At the Eighth Meeting of the States Parties held in 1998 it was decided that the issue did not need to be answered until a non-party actually attempted to make such a submission.<sup>141</sup>

However, in the most recent scholarly effort to address the question, the influential International Law Association's (ILA) Committee on Legal Issues of the Outer Continental Shelf has determined that non-parties do not have a right to make submissions to the CLCS.<sup>142</sup> The Committee cited language by the Permanent Court of International Justice in the *Free Zones of Upper Savoy and the District of Gex* case for the proposition that rights under a treaty can be accorded to non-parties by parties to the treaty only if such rights are stated in a sufficiently clear manner and there is an intention on the part of the states parties to accord a right, and an acceptance of the right by the third state.<sup>143</sup> To ascertain this intention, the Committee examined language in UNCLOS Article 4 of Annex II, which provides that a coastal state is to make a submission "as soon as possible but in any case within 10 years of the entry into force of this Convention for that State."<sup>144</sup> According to the Committee, the language and drafting history of Article 4 of Annex II provides support for a finding that it was not intended to accord a right to non-parties.<sup>145</sup> Moreover, it was noted that compromise on the acceptance of Article 76 was conditioned on inclusion of Article 82's requirements for revenue sharing in continental shelf areas beyond 200 miles.<sup>146</sup> Article 82 has not created an obligation on non-parties and therefore it should not be presumed that rights were granted to third parties without imposing at the same time concomitant obligations.<sup>147</sup>

Under similar reasoning, disputes concerning the interpretation or application of article 76 between states parties are subject to the compulsory dispute settlement provisions in Part XV of the Convention.<sup>148</sup> Non-parties are not subject to the same dispute settlement obligations and therefore should not be entitled to the benefit of utilizing CLCS procedures.

Finally, the Committee shed light on the meaning of the term "final and binding." It pointed out that Article 76(8) provides that the limits of the continental shelf established by a coastal state on the basis of the recommendations of the CLCS are to be "final and binding."<sup>149</sup> Once the outer limits of the continental shelf has been established, it will be final and binding on the coastal state concerned and other states parties to the Convention.<sup>150</sup> Conversely, if the outer limits of the continental shelf have not been established in accordance with the substantive and procedural requirements of Article 76, the limits may be challenged.<sup>151</sup>

These conclusions by the ILA cast considerable doubt on any notion that a non-party, such as the United States, can comfortably rely on international customary law as authority for its claim to extend its continental shelf beyond 200 miles. To the contrary, until a non-party becomes a member of the Convention and completes the substantive and procedural requirements of Article 76, its claim will never be viewed as "final and binding" and it will remain vulnerable to challenge.

From the perspective of the oil and gas industry, this means that any rights granted by the U.S. government to explore or exploit resources in the Western Gap are clouded and potentially subject to legal challenge.<sup>152</sup> This unsettled legal environment is a primary reason why the oil and gas industry has strongly advocated for quick U.S. accession to UNCLOS.<sup>153</sup> Until the United States becomes a party to the Convention, and successfully

submits its claim to the CLCS, it is very unlikely that the industry will take the risk of investing large sums in the hydrocarbon resources of the Western Gap.

The preceding discussion of evolving principles of international law applicable to the potential transboundary hydrocarbons in the Perdido Foldbelt, Walker Ridge, and Western Gap indicates that it is in the national interest of both the United States and Mexico to engage in a much more robust program of cooperation than is currently in place. Meaningful cooperation should no longer be viewed as entirely the burden of private-sector business interests. It is time for the U.S. and Mexican governments to work together to comprehensively manage the transboundary regions in the Gulf of Mexico. The Puerto Vallarta Draft Treaty is one effort in that direction.

## **The Puerto Vallarta Draft Treaty on Coordination of Transboundary Hydrocarbons in the Gulf of Mexico**

### *Purpose of the Treaty*

A distinguished team of geologists and lawyers formulated the PVD Treaty in 1991.<sup>154</sup> This group recognized that in the past, the abundance of oil and gas resources on each side of the maritime boundary made the issue of cooperation primarily a commercial one. But that deposits situated in areas near political borders will sooner or later affect the sovereign rights of the nations themselves and will be protected.<sup>155</sup> They noted that neighboring countries rarely address alternative policy scenarios until they have reached the level of a crisis. By that point solutions may be much more difficult to attain because they become burdened with intransigence and enflamed by nationalist attitudes.<sup>156</sup> The PVD Treaty was created to prevent crises from developing by serving as an anticipatory master plan for all of the transboundary hydrocarbons in the Gulf of Mexico.

### *2 Summary of the Treaty's Provisions*

The PVD Treaty is organized as follows:

- A Preamble broadly describing the intent and purpose of the Treaty.
- Article 1, which explains the geographical limits and scope of activities covered by the Treaty.
- Article 2, which provides a detailed set of guiding principles that govern the Parties' rights and obligations.
- Article 3 establishes the mechanism used to identify transboundary hydrocarbon deposits and requires notification of the Joint Permanent Coordinating Commission (JPCC, or Commission), the main policymaking body implementing the Treaty.
- Article 4 establishes the bilateral JPCC and defines its makeup and operating authority.
- Article 5 mandates that all activities relating to transboundary hydrocarbon deposits be only undertaken subject to provisions of a Bilateral Coordination Scheme (BCS). It also contains procedures and a detailed list of criteria that must be included in the BCS.
- Article 6 provides for notification requirements in case there is an "imminent environmental danger" as a result of activities of the BCS.

- Articles 7 and 8 contain dispute settlement provisions that move from good faith consultations to other more formal dispute settlement forums if the parties fail to resolve the issue.
- Articles 9, 10, and 11 address ratification, entry into force, amendments, and denunciation and termination of the Treaty.

These articles were modeled after existing transboundary hydrocarbon treaties and on innovative concepts that do not exist in current conventional practice.<sup>157</sup> It will be useful to look at each of these articles in more detail.

The PVD Treaty contains a Preamble that describes the intent and purpose of the instrument. It states that the parties wish to ensure that activities related to transboundary hydrocarbons in the Gulf be undertaken within the spirit of cooperation and friendly relations. In this regard, it specifically refers to United Nations General Assembly Resolution 34/99 of December 14, 1979, on the Development and Strengthening of Good Neighborliness Between States.<sup>158</sup> It also reaffirms each nation's sovereign rights over its natural resources by referring to United Nations Assembly Resolution 1803/XVII of December 14, 1962, "which establishes the right of each country to freely dispose of its natural resources in accordance with its national interest and in conformity with the rules and conditions which its people freely consider to be necessary or desirable."<sup>159</sup> It also recognizes Principle 21 of the Declaration adopted in Stockholm by United Nations Conference on the Human Environment, on June 16, 1972, which reasserts the sovereign right of nations to exploit their own resources pursuant to their own environmental policies subject to the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond the limits of national jurisdiction.<sup>160</sup> Finally, it provides that the treaty is to be fully consistent with obligations and positions created under other international agreements and the domestic constitutional and legal requirements in each nation.<sup>161</sup>

The preambular language is clearly intended to establish the political and legal setting that frames the treaty articles that follow. This setting involves a delicate balance of encouraging cooperation and joint development of transboundary resources as mandated by established and evolving principles of international law, while upholding Mexico's Constitutional requirements that the state has "inalienable" ownership of its natural resources. The drafters attempted to maintain this delicate balance throughout the draft Treaty, with mixed results.

Article 1 establishes that the provisions of the treaty pertain to "hydrocarbon deposits that extend across the common maritime boundary established by the Parties." Scientific research, exploration and exploitation, environmental inspection, surveillance, and safety measures on either side of the boundary are controlled by the treaty, in accordance with their respective national laws and regulations.<sup>162</sup>

Article 2 provides a set of nine guiding principles that govern the coordination mechanisms that are created in other articles of the treaty. Some of these principles are well-established principles of customary international law such as the duty of good faith,<sup>163</sup> the duty to refrain from causing damage to the resources or environment of the other party;<sup>164</sup> and the duty to consult.<sup>165</sup>

Others are purely conventional and unique to the functioning of this particular treaty such as the "duty not to take advantage of or use their respective national law and regulations and applicable rules of international law in such a way as would unnecessarily impede the equitable and reasonable utilization and distribution and conservation of transboundary hydrocarbon resources";<sup>166</sup> and the duty to use "proprietary information exchanged between

the Parties to be subject to the conditions of confidentiality established by the Party providing such information.”<sup>167</sup>

How these guiding principles are likely to be interpreted and applied is open to conjecture. However, they serve an important purpose by encouraging effective cooperation in all activities and restricting the unnecessary or arbitrary exercise of authority or the misuse of power by the two parties.

Article 3 establishes the criteria to identify transboundary hydrocarbon deposits and to protect them from unilateral exploitation. If either of the state parties or any person under their jurisdiction or control establishes the probable existence of a hydrocarbon deposit, which it reasonably believes to extend across the common maritime boundary, it must promptly notify the Commission.<sup>168</sup> From the date of declaration by the Commission, there is to be a moratorium on any drilling or drilling-related activities until the parties have mutually agreed on a BCS.<sup>169</sup>

If it is determined that an identified hydrocarbon deposit is wholly situated on one side of the boundary, the party on the other side shall not derive from the treaty any rights of access to that deposit.<sup>170</sup> Nor can it engage in directional drilling from its side of the boundary without a separate mutual agreement to that effect.<sup>171</sup>

Article 3(6) provides that the treaty also applies “to probable or confirmed transboundary hydrocarbon deposits identified by either of the Parties prior to the entry into force of the Treaty, and within 180 days thereafter the Parties shall comply with pertinent provisions of this Article.” Moreover, the moratorium and notification requirements are immediately binding on the date of entry into force of the Treaty.<sup>172</sup>

Article 4 establishes the Joint Permanent Coordinating Commission, which is modeled after the U.S.-Mexico International Boundary and Water Commission.<sup>173</sup> Each party appoints one Commissioner who shall in turn appoint a respective Secretariat and Scientific and Technical Staff.<sup>174</sup> The Commissioners are responsible for supervising all aspects of the Commission and for the implementation of any applicable BCS.<sup>175</sup> Each state party bears the expenses of the functioning of its respective Commissioner.<sup>176</sup> The Commissioners jointly recommend to the parties measures to be taken to adequately implement the treaty.<sup>177</sup>

Article 5 is by far the longest and most complex article in the draft treaty. It mandates that a BCS accompany all activities relating to probable transboundary deposits.<sup>178</sup> It provides that Article 5 does not apply to activities intended to lead to the identification of transboundary hydrocarbon deposit sites.<sup>179</sup> However, once a probable deposit has been identified and that information has been conveyed to the JPCC triggering the moratorium provided by paragraph 2 of Article 3, the parties have 60 days to commence negotiations on a BCS.<sup>180</sup> The negotiations are to take place under the auspices of the Commission and are to govern all activities pertaining to the identified probable transboundary deposits.<sup>181</sup>

The remainder of Article 5 contains procedures to negotiate the BCS and guiding principles and criteria that must be contained in any scheme. Examples include:

- Criteria to determine location, volume, migratory rate from one side of the boundary to the other, and equitable apportionment of the deposit.<sup>182</sup>
- Organization and description of a detailed extraction plan and joint activities containing all rights and obligations of the parties.<sup>183</sup>
- Approaches and methods for solving problems stemming from legal impediments to joint activities that may be imposed by the national laws and regulations of either of the parties.<sup>184</sup>
- Definitions and plans for scientific studies, supervision, and inspection measures and reports.<sup>185</sup>

- Criteria for naming and supervising the work of a National Operator or Operators, as well as the type of technology, methodology, and equipment to be employed.<sup>186</sup>
- Conditions relating to artificial installations and structures.<sup>187</sup>
- Determination of measures to secure optimum resource recovery and allocation of costs and revenue.<sup>188</sup>
- And establishment of standards to protect the environment and to respond in case of emergency in accordance with Article 6 and under a previously defined emergency plan.<sup>189</sup>

Article 6 provides the procedure to abate an environmental incident with as little delay as possible. It places an obligation on the parties to immediately notify the Commission if either has knowledge of or reason to believe that there is an “imminent environmental danger” as a result of the activities of a BCS.<sup>190</sup> The Commission has the responsibility to inspect and, if necessary, suspend all activities.<sup>191</sup> Based on the standards and guidelines contained in the BCS, the Commission is to direct and supervise those measures necessary to rectify the imminent threat.<sup>192</sup> The Commission is to ascertain the costs of the rectifying measures and the parties are to reimburse it for their prorated share.<sup>193</sup>

Article 7 contains procedures to resolve disputes between the parties. If good-faith efforts by the technical staff to resolve any differences have not occurred within six months, the differences are to be submitted, along with the entire record, to the parties for resolution by consultation.<sup>194</sup> If good faith consultations during a period of 12 months do not result in an accommodation, a Committee of Inquiry is to be appointed to study and verify the facts of the situation and to report to the parties.<sup>195</sup> After receiving the report, the parties have an additional six months of consultations to reach an agreement and if they fail to do so the provisions of Article 8 apply.<sup>196</sup> Article 8 requires that the parties promptly enter into formal, direct negotiations for the purpose of resolving the disagreement.<sup>197</sup> Should face-to-face negotiations fail after a period of six months, they are to refer the matter to mediation, conciliation, arbitration, the International Court of Justice, or any other means of peaceful settlement.<sup>198</sup>

Articles 9, 10, and 11 are procedural provisions dealing with ratification, entry into force, amendments, and termination of the draft treaty. It is important to note that should either party exercise its right to termination upon one-year notice, all BCS in force are to be carried out to their completion.<sup>199</sup>

## F. Recommendations for Future Action

Offshore transboundary resource exploitation triggers a broad range of challenges. In the absence of a workable cooperative agreement between the United States and Mexico, commercializing the huge reservoirs of hydrocarbons that exist in the ultra-deepwater maritime boundary region will be more difficult legally and politically. The value of cooperation in overcoming many of these challenges is evidenced by the large number of international cooperative agreements dealing with the equitable allocation of transboundary hydrocarbons that already exist.<sup>200</sup> While many of these transboundary resource agreements may serve as useful models, the draft PVD Treaty is especially important because it has incorporated many features that are uniquely suited to the Gulf of Mexico.

However, much work needs to be done in advance of creating a cooperative agreement. Resolving several preliminary issues would be helpful in setting the stage for negotiations over any future agreement. First among these is for the United States to become a party to UNCLOS. This is especially important in regards to future hydrocarbon development in the Western Gap. For example, if the United States remains outside the Convention, private

sector investors and other nations will be placed in the precarious situation of having to rely solely on unilateral interpretations of customary legal rights for authority over U.S. claims in the Western Gap. It will be very difficult to convince the international oil industry to risk investing in the Western Gap without the legal assurances that can only be provided by U.S. membership in UNCLOS coupled with the imprimatur provided by the CLCS legitimizing the nation's claim to an extended continental shelf. Moreover, in the absence of a final decision on the validity of the U.S. claim, Mexico will be placed in an awkward negotiating position in regards to the moratorium on drilling in the 2.8-nautical mile buffer zone that is scheduled to expire in 2010.<sup>201</sup>

Second, any successful cooperation agreement is dependent on clarifying and reforming Mexico's domestic law prohibiting foreign exploitation of natural resources. These reforms would not necessarily require drastic changes such as allowing direct investment into the Mexican energy extraction industry. Initially, all that may be required is clarifying the legal status of fugacious transboundary hydrocarbons located in reservoirs shared by the two countries. Mexican law currently prohibits the awarding of concessions or any variety of joint venture between foreign corporations and Pemex that might imply sharing investments, reserves, output, or profits.<sup>202</sup> This interpretation would have to be clarified to allow the type of coordinated international effort to jointly develop transboundary deposits envisioned by any cooperative agreement. For example, it could be persuasively argued that shared fugacious resources located in transboundary reservoirs do not fall within the ambit of Article 27 of the Mexican Constitution.<sup>203</sup> The international community's rejection of the rule of capture to common pools of fugacious resources and acceptance of correlative rights to a just share by all co-owning parties provides strong support for such an interpretation of Article 27. However, national sensitivity to anything that resembles relinquishing sovereignty over its resources may make this argument quite controversial.<sup>204</sup>

Whether this type of legal clarification is possible at this time is unclear. The Fox Administration and his National Action Party (PAN) tried to promote energy reform in 2004 with little success.<sup>205</sup> Similarly, the recently elected President, Felipe Calderon, who was Fox's Energy Minister, has spoken publicly about his desire to open Mexico's energy industry to more foreign investment. However, he has been silent on the subject since his razor-thin and politically divisive victory over Manuel Lopez Obrador.<sup>206</sup> Some observers believe that as a consequence of the painful 2006 national election any political movement toward opening up the nation's oil industry will be shelved and replaced with initiatives addressing poverty reduction and other social deficiencies ingrained in the country.<sup>207</sup>

Regardless of the near-term political situation in Mexico, further study regarding the legal obstacles under Mexican domestic law to joint development of transboundary hydrocarbons in the Gulf of Mexico would be quite useful. This research and dialogue should begin as soon as possible in anticipation of the day in the not too distant future when a viable production plan is put forward for one of these ultra-deepwater transboundary discoveries.

Third, clarification of U.S. law will also be important. A host of legal questions surround the development of the hydrocarbon resources located in the U.S.-Mexico Maritime Boundary Region. A detailed analysis of domestic legal issues that may impede such development is beyond the scope of this article. Nevertheless, it may be helpful to pose a few questions in need of resolution. These questions include: (1) How would actions taken by a U.S.-Mexico joint development authority fit within the regulatory structure of the Outer Continental Shelf Lands Act, the existing federal statute governing oil development on the continental shelf?<sup>208</sup> (2) Given the fact that "rights of the coastal State over the

continental shelf do not affect the legal status of the superjacent waters or air space above those waters,”<sup>209</sup> what, if any, legal authority is available in the Western Gap to regulate activities above any seabed lease? (3) Would the federal government have to compensate lease holders for breach of contract or for an unconstitutional taking of property for any damages resulting from their leases falling under the jurisdiction of a joint development authority?<sup>210</sup> (4) Do the National Environmental Policy Act and other environmental statutes apply to exploration and drilling in the Western Gap buffer zone and other transboundary deposits and how would any environmental requirements prescribed by a joint development authority be integrated with existing environmental statutes and regulations?<sup>211</sup>

Resolving these and a whole host of other legal and policy questions relevant to developing the hydrocarbon resources in the ultra-deepwater Gulf of Mexico should be undertaken as quickly as possible. If private sector oil and gas investment and exploration activities are allowed to move forward prior to addressing these issues, it will substantially increase the likelihood of future contract and property-based disputes and litigation.

It is not a question of if, but of when the United States and Mexico exploit the hydrocarbon resources of the ultra-deepwater boundary regions in the Gulf of Mexico. Increased government-to-government collaboration must be an essential feature of all future efforts to efficiently and equitably develop these resources. The objective of this collaboration should be to identify, in both governmental and non-governmental sectors, where innovative new efforts may provide a framework for a more sustained and systematic approach to developing and wisely managing the transboundary hydrocarbon resources located in the Gulf of Mexico. Models such as the draft PVD Treaty and other international cooperative oil and gas agreements exist to guide this effort. It is now up to the leaders in the United States and Mexico to recognize that much work needs to be done today to develop an architecture for strengthened cooperation and to not wait until unacceptable options are forced on them by future events.

## Notes

1. The term “deepwater” is defined by the U.S. government as water depths of greater than 1,000 feet (305 m) and “ultra-deepwater” as water depths of greater than 5,000 feet (1,524 m). Leanne S. French, et al., in *Deepwater Gulf of Mexico 2005: Interim Report of 2004 Highlights*, U.S. Dept. of Interior, Minerals Management Service, May 2005, OCS Report MMS 2005-023.

2. Russell Gold, In Gulf of Mexico, Industry Closes In On New Oil Source, *Wall Street Journal* (online), September 5, 2006, p. A1. However, this widely published assertion was criticized as an exaggeration by Richie Baud, Deputy Regional Supervisor, Minerals Management Service, during comments at the 2007 Law of the Sea Institute Conference held at the Harte Research Institute for Gulf of Mexico Studies, March 22–24, 2007.

3. Model Puerto Vallarta Draft Treaty on Guiding Principles and Criteria for the Coordination of Activities Regarding Submarine Transboundary Hydrocarbon Resources Lying in the Maritime Boundary Between Neighboring Coastal States. A copy of the draft treaty has been reproduced in Alberto Szekely, Albert E. Utton, Ulises Canchola, Carmen Pedrazzini, William J. Waggoner, and Ross Shipman, The Puerto Vallarta Draft: A Proposed Treaty for Developing Oil and Gas in the Gulf of Mexico, in *Boundaries and Energy: Problems and Prospects*, G. Blake, et al., Eds. (1998), pp. 485–508. See infra note 30 and accompanying text.

4. Extreme physical conditions coupled with myriad technical difficulties make ultra-deepwater drilling exorbitantly expensive. Each rig may cost upwards of \$1 to \$2 billion in up front capital expenditures. Roger N. Anderson and Albert Boulanger, Prospectivity of the Ultra-Deepwater Gulf of Mexico, January 24, 2003 at 8, available at [www.leanenergy.ideo.columbia.edu](http://www.leanenergy.ideo.columbia.edu). See also, Laura Peterson, Big Oil Wields Ultra Deep Influence, *Energy Bulletin*, December 20, 2004, available at [www.energybulletin.net/3691.html](http://www.energybulletin.net/3691.html).

5. In 1990, President Bush placed a moratorium on offshore exploration in about 80 percent of the nation's exclusive economic zone. President Clinton extended the moratorium until 2012. Currently 54 percent of leases in the Gulf of Mexico are classified as deepwater. This represents an 840 percent increase in the past decade. See generally, *Leasing Oil and Natural Gas Resources Outer Continental Shelf*, U.S. Department of the Interior, Minerals Management Service, February 13, 2006, at 7.

6. In a recent survey sponsored by *Foreign Policy* magazine and The Center for American Progress of over 100 of America's most influential national security experts, 82 percent listed reducing dependence on foreign oil as a major corrective for enhancing national security. *The Terrorism Index*, Center for American Progress Website, June 14, 2006, available at [www.americanprogress.org](http://www.americanprogress.org). For an important and thoughtful explanation of the U.S. concern over energy security, see the remarks by Senator Richard Lugar, "Energy Security: Cause for Cooperation or Competition?" The Brookings Institution 90th Leadership Forum Series, March 13, 2006, available at [www.brookings.edu/comm/events/20060313.htm](http://www.brookings.edu/comm/events/20060313.htm).

7. Robert Collier, Mexico's Oil Bonanza Starts to Dry Up, *San Francisco Chronicle*, June 30, 2006. See also, David Shields, Pemex: Problems and Policy Options, (Center for Latin American Studies, University of California, Berkeley Policy Papers), February 2006, at 2-5.

8. Shields, *supra* note 7, at 5 (indicating that the oil industry accounted for 37.6 percent of government revenue in 2005, up from just 30 percent at the beginning of the decade).

9. Wordpress.org, *Mexico: Oil Depletion and Illegal U.S. Immigration*, April 25, 2006, available at [www.wordpress.org/Americas/2326.cfm](http://www.wordpress.org/Americas/2326.cfm).

10. John C. Roper, Deep Seas Hold Key to Oil's Future, *The Houston Chronicle*, May 1, 2005, Business p. 1. See also, Anderson, *supra* note 4, at 2. In September 2004, President Vicente Fox created an international stir by confirming statements made by Pemex officials that Mexico's Perdido Foldbelt geologic region alone potentially contains 54 billion BOE. Shields, *supra* note 7, at 10. This huge estimate provided by the Mexican government has been questioned by many observers as highly speculative. *Mexico's Pemex in a Corner After Oil Find Boast*, September 10, 2004, available at [www.planetark.com/dailynewsstory.cfm/newsid/27056/story.htm](http://www.planetark.com/dailynewsstory.cfm/newsid/27056/story.htm).

11. French, *supra* note 1, at ix.

12. *Western Gulf of Mexico Sale 200 Attracts \$462.8 million in Bids*, Minerals Management Service Press Release #3547, August 16, 2006.

13. Dave Meyer, et al., Emergence of the Lower Tertiary Wilcox Trend in the Deepwater Gulf of Mexico, *World Oil*, May 2005 pp. 72-77, available at [www.worldoil.com/magazine/MAGAZINE\\_DETAIL.asp?ART\\_ID=2596&MONTH.YEAR=May-2005](http://www.worldoil.com/magazine/MAGAZINE_DETAIL.asp?ART_ID=2596&MONTH.YEAR=May-2005), see Figure 1.

14. *Id.*

15. Don Lyle, Mexico Zeroes in on Deep Water: Pemex Hooks Big Pay in Deepwater Gulf of Mexico, E&PNET.COM, July 4, 2006, available at [www.eandpnet.com/articles/everyMonth/5927.htm](http://www.eandpnet.com/articles/everyMonth/5927.htm).

16. Marshall DeLuca, Deepwater Dreams, *OilOnline*, October 26, 2005, available at [www.oilonline.com/news/features/oe/20051026.deepwate.19507.asp](http://www.oilonline.com/news/features/oe/20051026.deepwate.19507.asp).

17. Roper, *supra* note 10.

18. The term "play" is defined as "a group of geologically related hydrocarbon accumulations that share a common history of hydrocarbon generation, accumulation, and entrapment." Catherine Dunkel and Kenneth Piper, 1995 National Assessment of United States Oil and Gas Resources Assessment of the Pacific Outer Continental Shelf, OCS Report MMS 97-0019, at 5.

19. According to the U.S. Minerals Management Service, "[i]n the past, major companies were responsible for the majority of discoveries and led the way into the deepest waters. However, the number of discoveries by nonmajor companies has surpassed that by major companies." Leanne S. French, et al., *Deepwater Gulf of Mexico 2006: American's Expanding Frontier* (U.S. Department of Interior Minerals Management Service, OCS Report MMS 2006-022), May 2006, at 19.

20. Deepwater Royalty Relief Act of 1995, 43 U.S.C. 1337. The DWRRRA was enacted to spur deepwater leasing activity. It provides suspension of royalty payments up to certain levels of production based on water depth.

21. French, *supra* note 19, at Figure 13.
22. *Ibid.*, at Appendix A.
23. David Shields, Pemex Struggles to Keep Up Output, *Offshore*, at 3, available at [www.offshore-mag.com/Articles/Article\\_Display.cfm?Article\\_ID=237137](http://www.offshore-mag.com/Articles/Article_Display.cfm?Article_ID=237137).
24. Mexico Constitution, Title I, article 27.
25. David Luhnnow, As Mexico's Oil Giant Struggles, Its Laws Block Foreign Help, *Wall Street Journal*, June 15, 2005, at 1. See also discussion, *infra* notes 201–206 and accompanying text.
26. Exxon, BP Reject Mexico Offer for Oil Drill Contracts, Bloomberg News, February 24, 2006, available at [www.bloomberg.com/apps/news?pid=email.us&refer=news\\_index&sid=azyHZpjTWxpU](http://www.bloomberg.com/apps/news?pid=email.us&refer=news_index&sid=azyHZpjTWxpU).
27. Shields, *supra* note 7, at 5–7; and Luhnnow, *supra* note 25.
28. See below, Part C.
29. R. Q. Foote, R. G. Martin, and R. B. Powers, Oil and Gas Potential of the Maritime Boundary Region in the Central Gulf of Mexico, *The American Association of Petroleum Geologists Bulletin*, vol. 67, no. 7, July 1983, pp. 1047–1065, 1063.
30. PVD Treaty, *supra* note 3. See also discussion below in Part E.
31. Szekeley, *supra* note 3, at 490.
32. *Ibid.*, at 491.
33. See *supra* notes 23–27 and *infra* 201–206 and accompanying text.
34. For a good overview of the U.S. regulatory regime governing offshore energy development see, J. Kalo, R. Hildreath, A. Rieser, D. Christie, and J. Jacobson, *Coastal and Ocean Law: Cases and Materials*, 2nd ed., (American Casebook Series, West Group, 2002), pp. 373–434.
35. This is discussed further below in Part E.
36. See below, Part B.
37. During most of the 1990s, the cost of a barrel of oil averaged a little over \$20 in 2004 dollars. WTRG Economics, Oil Price History and Analysis, December 4, 2005, available at [www.wtrg.com/index.html](http://www.wtrg.com/index.html). By summer 2006, the average cost was between \$70–75.
38. *Infra* notes 201–206 and accompanying text.
39. See below, Part B1. This article primarily focuses on only three portions of the U.S.-Mexico Maritime Boundary Region (the Perdido Foldbelt, Walker Ridge and Western Gap). However, other areas of the Boundary Region may also contain commercial quantities of hydrocarbons. See generally Foote, *supra* note 29 and Alberto Szekely, The International Law of Submarine Transboundary Hydrocarbon Resources: Legal Limits to Behavior and Experiences for the Gulf of Mexico, 26 *J. Nat. Resources*, 733 (1986).
40. See below, Part B2.
41. Treaty Between the Government of the United States of America and the Government of the United Mexican States on the Delimitation of the Continental Shelf in the Western Gulf of Mexico Beyond 200 Nautical Miles, June 9, 2000, U.S.-Mex., S. Treaty Doc. No. 106-39 (2000).
42. French, *supra* note 1, at 10 (99 percent of total Gulf of Mexico proved reserves are in reservoirs younger than 24 million years. However this figure does not include the most recent tertiary discoveries).
43. Angel Gonzalez, U.S. Gulf Oil Discovery Lifts Hopes of New Geological Play, *Market Watch from Dow Jones*, August 31, 2006, available at [www.marketwatch.com/News/Story/Story.aspx?guid=%7B13D1DCA3-44D1-8122-9B11CE64DA7B%7D&siteid=mktw](http://www.marketwatch.com/News/Story/Story.aspx?guid=%7B13D1DCA3-44D1-8122-9B11CE64DA7B%7D&siteid=mktw).
44. Gold, *supra* note 2.
45. *Id.*
46. *Ibid.*, at 10. See also, Larry Zarra, Wilcox Depositional Systems: Shelf to Deep Basin, *New Orleans Geological Society Log*, April 2006, at 7 and 26.
47. These discoveries include: Unocal's *Trident* and *Tobago*; Shell's *Baha* and *Great White*; Chevron's *Tiger* and *Silvertip*; and Total's *Gotcha*. Don Lyle, Discoveries Wait for Infrastructure, E&P net.com, April 4, 2004, available at [www.eandpnet.com/articles/everyMonth/2527.htm](http://www.eandpnet.com/articles/everyMonth/2527.htm). See also Total Boosts Alaminos Canyon Find, July 13, 2006, available at [www.offshore247.com/news/article.asp?Id=5621](http://www.offshore247.com/news/article.asp?Id=5621).

48. See, Foote, *supra* note 29, at 1063. Estimates of in-place resources (not of recoverable amounts) in the U.S.-Mexico maritime boundary region of the Gulf range from 2.24 to 21.99 billion barrels of oil and 5.48 to 44.40 trillion cubic feet of natural gas. *Id.*

49. See *supra* notes 15–16 and accompanying text.

50. Lyle, *supra* note 15, at 2. See also, Vinicio Suro-Perez, Acting Planning and Evaluation Vice President Pemex, *Mexico GOM: Offshore E&P Activities and Objectives For the Years Ahead*, PowerPoint presentation to the International Oil and Gas Business Days, Oslo, Norway, August 2005, available at [www.intsok.no/PHP/index.php?id=3821](http://www.intsok.no/PHP/index.php?id=3821).

51. Ray Tyson, Spar System Chosen for Perdido Project, *Production News*, December 10, 2006. Shell is building a regional processing hub capable of handling 130,000 barrels of oil equivalent per day that is designed to gather, process, and export production within a 30-mile radius of the hub. It is unclear how this oil will be transported from the hub to shore.

52. Don Lyle, Discoveries Wait for Infrastructure, April, 2004, available at [www.eandpnet.com](http://www.eandpnet.com).

53. FPSOs offer an option for developing remote areas of the Gulf of Mexico that do not currently have existing infrastructure. They are large moored tanker ships that processes and temporarily hold production from nearby sub sea wells. The ships offload the stored oil to lighter vessels that transport it to onshore facilities. FPSOs have been used for years in international operations, such as in the North Sea. However, they were just approved by the Minerals Management Service for use in the Gulf of Mexico in 2002. See, MMS Reaches Decision About FPSOs in Gulf of Mexico, *MMS News Release*, January 2, 2002, available at [www.gomr.mms.gov/homepg/whatsnew/newsreal/020102.html](http://www.gomr.mms.gov/homepg/whatsnew/newsreal/020102.html).

54. *Id.*

55. The term “fugacious” is related to the word “fugitive” and means “fleeing or apt to flee; passing quickly away.” *Webster’s New World Dictionary*, College Edition (1962) at 584. So-called fugacious resources include liquid oil and gas, migratory wild animals, and water resources.

56. See Richard J. McLaughlin, Foreign Access to Shared Marine Genetic Materials: Management Options for a Quasi-Fugacious Resource, 34 *Ocean Dev. And Int’l. Law*, 297, pp. 316–17 (2003). See also, below, Part C.

57. *Devon Energy Announces Positive Results From Production Test of Jack Well*, Devon Energy Corporation Investor Relations, Sept. 5, 2006, available at [phx.corporate-ir.net/phoenix.zhtml?c=67097&p=irol-newsArticle&t=Regular&id=901621&](http://phx.corporate-ir.net/phoenix.zhtml?c=67097&p=irol-newsArticle&t=Regular&id=901621&). Devon owns 25 percent of the Jack Well, Chevron owns 50 percent, and Norway’s Statoil owns the remaining 25 percent.

58. Gold, *supra* note 2.

59. *Id.*

60. Gonzalez, *supra* note 43.

61. See generally Foote, *supra* note 29, at 1063.

62. See *infra* notes 100–119 and accompanying text.

63. See *infra* notes 120–127 and accompanying text.

64. Delimitation Treaty, *supra* note 41.

65. Letter of Submittal, U.S. Dept. of State, Washington D.C., July 5, 2000, Sen. Treaty Doc. No. 106-39, reproduced in Ted L. McDorman, et al., *International Ocean Law: Materials and Commentaries* (Carolina Acad. Press, 2005), pp. 139–146, 140. See also *infra* note 80 and accompanying text.

United Nations Convention on the Law of the Sea, opened for signature Dec. 10 1982, U.N. Doc. A/CONF.62/122 (1982), 1833 U.N.T.S. 397 [hereinafter UNCLOS]. Reprinted in *Official Text of the United Nations Convention on the Law of the Sea with Annexes and Index*, U.N. sales No. E.97.V.10 (1997).

66. Delimitation Treaty, *supra* note 41.

67. *Ibid.*, article 4.

68. *Ibid.*, article 4(1)–(6).

69. *Ibid.*, article 5(1)(a). To the author’s knowledge no such meeting has yet been held.

70. *Ibid.*, article IV(1) and (3).

71. See below, Part C.

72. Gao Zhiguo, Legal Aspects of Joint Development in International Law, in *Sustainable Development and Preservation of the Oceans: The Challenges of UNCLOS and Agenda 21* (Law of the Sea Institute, 1995), pp. 629–644, at 634.

73. The “rule of capture” arose in the late Nineteenth Century as U.S. courts tried to deal with ownership issues involving oil and gas production from pools underlying the lands of two or more owners. It basically provides that ownership is granted to that party that “captures” the natural resource by bringing it within its dominion and control. As early as 1900, the U.S. Supreme Court in *Ohio Oil Company v. Indiana*, 177 U.S. 190, 20 S. Ct. 576, 44 L. Ed. 729,739, rejected the “rule of capture” and found that co-owners of oil and gas pools have “co-equal” or correlative rights to extract the common resource and that local governments have the authority to enact conservation legislation designed to secure its “just distribution.” See McLaughlin, *supra* note 56, at 319–320.

74. Szekeley, *supra* note 39, at 766.

75. McLaughlin, *supra* note 56 at 320. See generally on evolving international law and transboundary hydrocarbon deposits: Masahiro Miyoshi, The Joint Development of Offshore Oil and Gas in Relation to Maritime Boundary Delimitation (International Boundaries Research Unit, Maritime Briefing No. 5 1999); Rainier Lagoni, *Oil and Gas Deposits Across National Frontiers*, 73 AM. J. INT’L L. 215 (1979); William Onorato, *Apportionment of an International Common Petroleum Deposit*, 26 INT’L AND COMP. L.Q. 324 (1979); and William Onorato, *Apportionment of an International Common Petroleum Deposit*, 17 INT’L AND COMP. L.Q. 85 (1968).

76. “Joint development” has been broadly defined as “a decision by [two or more nations] to pool any rights they may have over a given area and, to a greater or lesser degree, undertake some form of joint management for the purposes of exploring for and exploiting offshore minerals.” Ian Townsend-Gault, *Joint Development of Offshore Mineral Resources—Progress and Prospects for the Future*, 12 *Nat Resources F.*, pp. 275, 275 (1988). “Unitization” refers to a process in which separate interest owners in a common oil and gas reservoir pool such interest to form a single unit under the sole operation of a single operator who conducts unit operations for all so that maximum efficiency recovery is accomplished and production and/or revenues there may be shared out in accordance with the agreed basis established in the unit plan. William Onorato, *Apportionment of an International Common Petroleum Deposit*, 26 *Int’l. and Comp. L.Q.*, 324, pp. 332–333 (1977).

77. David M. Ong, *Joint Development of Common Offshore Oil and Gas Deposits: “Mere State Practice or Customary International Law,”* 93 Am. J. Int’l. L., 771, p. 802 (1999).

78. *Id.*

79. *Ibid.*, at 803.

80. UNCLOS, *supra* note 65.

81. Mexico became a state party to UNCLOS on March 18, 1983.

82. According to the *Restatement (Third) of Foreign Relations Law of the United States* pt. 5, introductory note, at 5 (1987). [T]he United States in effect agreed to accept the substantive provisions of the Convention, other than those dealing with deep-seabed mining, in relation to all states that do so with respect to the United States. Thus, by express or tacit agreement accompanied by consistent practice, the United States, and states generally, have accepted the substantive provisions of the Convention. . . . as statements of customary international law binding upon them apart from the Convention.

It should be noted that the deep-seabed mining provisions in Part XI of UNCLOS were renegotiated and an agreement reached in 1994 that substantially modifies the provisions that were most objectionable to the United States and other nations. In a footnote to the *Restatement*, the reporters point out that there is disagreement concerning the customary nature of articles, 64–67, article 82, articles 76, and 82 together, the deep seabed mining provisions of Part XI (since renegotiated), and the dispute settlement provisions of part XV. *Id.*, introductory note, at 6, n.6. But see W. T. Burke, *Customary Law of the Sea: Advocacy or Disinterested Scholarship?*, *Yale J. Int’l. L.*, 508, p. 510 (1989) (criticizing the *Restatement* for making no attempt to provide details of state practices to support its assertions).

83. According to the U.S. Commission on Ocean Policy, a blue-ribbon panel appointed by the President to make recommendations for a coordinated and comprehensive national ocean policy:

If the United States is to ensure that its interests as a maritime power and coastal state are protected, it must participate in this process [of participating in the progressive development of UNCLOS]. The best way to do that is to become a party to the Convention, and thereby gain the right to place U.S. representatives on its decision-making bodies. Participation in the Convention would also enhance America's prestige and credibility as a leader on global ocean issues. U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century*, Final Report (2004), at 445. See also, The U.S. Ocean Action Plan: The Bush Administration's Response to the U.S. Commission on Ocean Policy (2005), at 35.

84. Paul Kelly, *Marine Science and Policy: Continental Shelf Petroleum Development*, presented at the 30th Virginia Law of the Sea Conference (Dublin, Ireland 2006), at 8 (discussing obstacles by "a handful of Senators" and likelihood of accession in the future). Copy on file with author.

85. Lagoni, *supra* note 75, at 238 and Ong, *supra* note 77, at 774.

86. Richard J. McLaughlin, UNCLOS and the Demise of the United States' Use of Trade Sanctions to Protect Dolphins, Sea Turtles, Whales, and Other International Marine Living Resources, 21 *ecology L. Q.*, 1, p. 57 (1994).

87. UNCLOS, *supra* note 65, article 122 provides: enclosed or semi-enclosed sea means a gulf, basin, or sea surrounded by two or more States and connected to another sea or the ocean by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States.

88. Rainer Lagoni, Commentary, *Law of the Sea in the 1980s: Proceedings*, Choon-ho Park ed., (1983), pp. 517, 519.

89. UNCLOS, *supra* note 65, article 123(a)(b)(c)(d).

90. Ong, *supra* note 77, at 783.

91. *Ibid.*, at 778.

92. Lagoni, *supra* note 75, at 217.

93. For example, variables that can only be determined by drilling are the thickness of the hydrocarbon-bearing reservoir and well pressures. See, Kendall Freeman Law Firm, Oil and Gas Deposits at International Boundaries: New Ways for Governments and the Oil and Gas Companies to Handle an Increasingly Urgent Problem, *Guidance Note*, at 9, March 2006, available at [www.kendallfreeman.com](http://www.kendallfreeman.com).

94. *Id.*

95. *Supra* notes 67–71 and accompanying text.

96. For example, Pemex's planned Alaminos exploratory well will be drilled within a few miles of the U.S. boundary. See Figure 1.

97. Proclamation No. 2667, 3 C.F.R. 67 (1943–1948 Comp.). See also Statement Accompanying Continental Shelf Proclamation, reprinted in 13 U.S. *Dep't St Bull.*, p. 484 (1945).

98. Convention on the Continental Shelf, done at Geneva, Apr. 29, 1958, 15 U.S.T. 471, T.I A.S. No. 5578, 499 U.N.T.S. 311.

99. *Ibid.*, article 1.

100. UNCLOS, *supra* note 65, article 76(1).

101. *Ibid.*, article 76(4).

102. *Ibid.*, article 76(8).

103. *Ibid.*, article 82. Coastal states that exploit non-living resources beyond 200 miles must make payments starting in the sixth year of production at a rate of one percent of the value or volume of the production, which is increased by one percent each year until the 12th year when the rate remains at seven percent for the remainder of production. For a useful summary, see Szekely, *supra* note 39 at 740.

104. *Ibid.*, Annex II, article 4.

105. For a summary of the efforts to postpone the ten-year time limit for submissions, see *Issues With Respect to Article 4 of Annex II to the Convention (ten-year time limit for submissions)*, United Nations Division for Ocean Affairs and the Law of the Sea, available at [www.un.org/depts/los/clcs\\_new/issues\\_ten\\_years.htm](http://www.un.org/depts/los/clcs_new/issues_ten_years.htm).

106. *Ibid.*, at 4.

107. UNCLOS, *supra* note 65, article 76(4)(a)(ii).

108. *Ibid.*, article 76(4)(a)(i).

109. It has been estimated that completing a submission before the CLCS should generally take about seven or eight years. Victor Prescott, National Rights to Hydrocarbon Resources of the Continental Margin Beyond 200 Nautical Miles, in *Boundaries and Energy: Problems and Prospects* G. Blake, et al., eds. (1998), pp. 51–82, 69. However, Australia's submission took over 10 years, Ireland's 9 years and Brazil's 16 years. Peter S. Prows, Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law, New York University Public Law and Legal Theory Working Papers No. 30 (2006), at 36, available through The Berkeley Electronic Press.

110. Commission on the Limits of the Continental Shelf, *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf, CLCS 11*, adopted 13 May 1999, available at [www.un.org/Depts/los/clcs\\_new/documents/CLCS\\_11.htm](http://www.un.org/Depts/los/clcs_new/documents/CLCS_11.htm).

111. UNCLOS, *supra* note 65, article 76(8).

112. *Ibid.*, Annex II, article 8.

113. See Ted L. McDorman, The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World, 17 *International Journal of Marine and Coastal Law*, pp. 301–324, 306 and 315; S. Cockburn, S. Nichols, D. Monahan, and T. McDorman, Intertwined Uncertainties: Policy and Technology on the Juridical Continental Shelf, *Proceedings 2001 ABLOS Conference*, Monaco, Oct. 2001, at 5–6; and Report of the Committee on Legal Issues of the Outer Continental Shelf, In International Law Association, *Seventy-Second Conference* (ILA, Toronto: 2006; hereinafter ILA Second Report), at 11–15.

114. According to one commentator, its primary mission is “to act as a watchdog to prevent excessive coastal state claims.” L. D. M. Nelson, The Continental Shelf: Interplay of Law and Science, in *Liber Amicorum Judge Shigeru ODA N. Ando*, et al., eds. (2002), pp. 1235–1253, 1237.

115. Cockburn, *supra* note 113, at 6 and ILA Second Report, *supra* note 113, at 14–15.

116. But see, ILA Second Report, *supra* note 113, at 26 (asserting that the International Seabed Authority cannot be a party to proceedings concerning a dispute over the outer limits of the continental shelf).

117. Cockburn, *supra* note 113, at 7.

118. See McDorman, *supra* note 113, at 305.

119. See discussion *supra* notes 61–71 and accompanying text.

120. UNCLOS, *supra* note 65, article 76(1). See also, ILA Second Report, *supra* note 113, at 2 and *Continental Shelf (Libyan Arab Jamahiriya/Malta)*, Judgment of 3 June 1985, [1985] ICJ Reports 13, at 30, para. 27 and 34–35, para. 34.

121. UNCLOS, *supra* note 65, article 77(3).

122. If all of the parties involved are members of UNCLOS, then a challenge may be brought under the dispute settlement provisions in Part XV of the Convention. An exception to this involves disputes over delimitation of the continental shelf between states with opposite or adjacent coasts. UNCLOS, *supra* note 65, article 298(1)(a)(i) and 83(1). If a non-party is involved then the dispute would be settled by other peaceful means in accordance with article 2, paragraph 3 of the United Nations Charter.

123. Personal communication with Galo Hurtado Carrera, Mexico's Delegate to the CLCS, July 21, 2006.

124. Jorge A. Vargas, The Gulf of Mexico: A Binational Lake Shared by the United States and Mexico, A Proposal, 9 *Transnat'l Law*, pp. 459, 472 (1996).

125. *Ibid.*, citing Richard T. Buffler, Seismic Stratigraphy of the Deep Gulf of Mexico Basin and Adjacent Margins, in *The Geology of North America vol. J: The Gulf of Mexico Basin* 353, Amos Salvador, ed., (1991). Until this time, Mexico had publicly declared that the Western Gap was not part of its continental shelf and was instead part of the “deep ocean floor” belonging to the International Seabed Authority. Vargas, *supra* note 124, at 471.

126. Larry Mayer, Marin Jakobsson and Andrew Armstrong, The Compilation and Analysis of Data Relevant to a U.S. Claim Under United Nations Law of the Sea Article 76: A Preliminary Report, (Center for Coastal and Ocean Mapping/Joint Hydrographic Center, May 2002), at 50.

127. J. V. Gardner, L. A. Mayer, and A. Armstrong, Mapping Supports Potential Submission to U.N. Law of the Sea, *Eos*, vol. 87, no. 16 (April 18, 2006) at 157, 160. Mexico may not extend its continental shelf into the Western Gap under the criteria in Article 76(4)(ii) because the Gap lies farther than 60 nautical miles from the foot of Mexico's continental slope. Conversely, the United States should be able to use 76(4)(ii) as well as 76(4)(i) because all of its portion of the Gap probably lies within 60 nautical miles of the foot of the continental slope.

128. Also referred to as the "Gardner formula."

129. Hollis D. Hedberg, Comment, Relation of Political Boundaries on the Ocean Floor to the Continental Margin, 17 *Virginia J. Int'l. L.*, pp. 57, 62 (1976).

130. Nelson, *supra* note 114, at 1244, citing CLCS/11, 67, paras. 8.5.3–8.5.4.

131. UNCLOS, *supra* note 65, articles 133–137 (provides general definition of the "Area"). See Vargas, *supra* note 124, at 471–472 (discussing former official position of Mexico and other nations that Western Gap was part of the international area and subject to common heritage principles).

132. In a worst-case scenario, the delineation treaty between the U.S. and Mexico would be rendered null and void and a new treaty would have to be negotiated with the International Sea-Bed Authority as the representative of international community interests in the Area.

133. France, Ireland, Spain, United Kingdom of Great Britain and Northern Ireland, Joint Submission to the Commission on the Limits of the Continental Shelf Pursuant to Article 76, para 8 of The United Nations Convention on the Law of the Sea 1982 in Respect of the Area of the Celtic Sea and the Bay of Biscay, part 1 Executive Summary, May 19, 2006, available at [www.un.org/Depts/los/clcs\\_new/submissions\\_files/submission\\_frgbires.htm](http://www.un.org/Depts/los/clcs_new/submissions_files/submission_frgbires.htm).

134. See discussion at *infra* notes 142–153 and accompanying text.

135. *Supra* note 113 and accompanying text.

136. J. A. Roach and R. W. Smith, *Excessive Maritime Claims*, U.S. *Naval War College* (1994) pp. 124–125.

137. International Law Association, Preliminary Report from the Committee on Legal Issues of the Outer Continental Shelf (New Delhi Conference, 2002), at 14 (describing the U.S. position).

In the lease stipulations applied to oil and gas leases in the Western Gap, the U.S. Minerals Management Service explicitly requires that Royalty payments under article 82 will be collected only "[i]f the U.S. becomes a party to the 1982 Law of the Sea Convention prior to or during the life of a lease issued by the U.S. on a block or portion of a block located beyond the U.S. EEZ and subject to such conditions that the Senate may impose through its constitutional role of advice and consent." Minerals Management Service, *Lease Stipulations: Oil and Gas Lease Sale 196, Western Gulf of Mexico, Final Notice of Sale*, Stipulation No. 4 at p. 10.

138. Tommy T. B. Koh, *A Constitution for the Oceans*, statements by the President on 6 and 11 December 1982 at the Final Session of the Conference at Montego Bay.

139. R. R. Churchill and A. V. Lowe, *The Law of the Sea*, 3rd ed. (Juris Publishing, Manchester University Press, 1999), at 150; and McDorman, *supra* note 113, at 303.

140. T. A. Clingan, Jr., The Law of the Sea in Prospective: Problems of States not Parties to the Law of the Sea Treaty, (1987) 30 *German Yearbook of International Law*, pp. 101–119 at 112; and McDorman, *supra* note 113, at 303–304.

141. *Report of the Eighth Meeting of the State Parties*, Doc. SPLOS/31 of 4 June 1998, available at [www.un.org/Depts/los/meeting\\_states\\_parties/documents/SPLOS\\_31.htm](http://www.un.org/Depts/los/meeting_states_parties/documents/SPLOS_31.htm).

142. ILA Second Report, *supra* note 113, at 20–21.

143. *Ibid.*, at 20.

144. *Id.*

145. *Ibid.*, at 20–21.

146. *Ibid.*, at 21.

147. *Id.*

148. *Ibid.*, at 25.

149. *Ibid.*, at 15–16.

150. *Id.*

151. *Id.*

152. Paul L. Kelly, *Break the Boundaries and Explore New Frontiers: Evaluating the Impact of the Law of the Sea Treaty on Future Offshore Drilling*, Adaptation from a presentation to the Global Offshore Drilling 2005 Conference, Houston, Texas April 19, 2005, at 13–17. Copy on file with author.

153. Kelly, *supra* note 84, at 8.

154. PVD Treaty, *supra* note 3; and see Szekeley, *supra* note 3.

155. Szekeley, *supra* note 3, at 489–490.

156. *Ibid.*, at 491.

157. *Ibid.*, at 493.

158. PVD Treaty, *supra* note 3, at Preamble.

159. *Id.*

160. *Id.*

161. *Id.*

162. *Ibid.*, article 1(2).

163. *Ibid.*, article 2(2).

164. *Ibid.*, article 2(4).

165. *Ibid.*, article 2(5).

166. *Ibid.*, article 2(3).

167. *Ibid.*, article 2(7).

168. *Ibid.*, article 3(1).

169. *Ibid.*, article 3(2). The concept of the BCS was taken directly from the 1983 La Paz Agreement for the Protection and Improvement of the Environment in the Border Area Between Mexico and the United States. Szekely, *supra* note 3, at 502.

170. *Ibid.*, article 3(4).

171. *Id.*

172. *Id.* It is unclear whether this provision would trigger a requirement to compensate the existing leaseholder for any damages resulting from the governmental action under a breach of contract action or takings claim under the Fifth Amendment to the U.S. Constitution. See *infra* note 209 and accompanying text.

173. The International Boundary and Water Commission was created in 1889 to apply the rights and obligations of the United States and Mexico under boundary and water treaties and related agreements. A description of the Commission's work may be found at [www.ibwc.state.gov/html/about.us.html](http://www.ibwc.state.gov/html/about.us.html).

174. PVD Treaty, *supra* note 3, article 4(1).

175. *Ibid.*, article 4(5).

176. *Ibid.*, article 4(2).

177. *Ibid.*, article 4(3).

178. *Ibid.*, article 5(1).

179. *Id.*

180. *Ibid.*, article 5(2).

181. *Id.*

182. *Ibid.*, article 5(d)(i–iv).

183. *Ibid.*, article 5(d)(v–viii).

184. *Ibid.*, article 5(d)(ix). This is an odd provision because it would seem advisable to resolve any legal impediments to joint activities at a much earlier stage in the negotiation process than during the CCS. See further discussion, *infra* notes 209–211 and accompanying text.

185. *Ibid.*, article 5(d)(x–xiii).

186. *Ibid.*, article 5(d)(xiv–xviii).

187. *Ibid.*, article 5(d)(xix–xx).

188. *Ibid.*, article 5(d)(xxi–xxvii).

189. *Ibid.*, article 5(d)(xxviii).

190. *Ibid.*, article 6(1). “[I]mminent environmental danger” is defined as “any occurrence. . . that causes or may cause substantial damage to the environment surrounding that BSC site.” *Ibid.*, article 6(7).

191. *Ibid.*, article 6(2–3).

192. *Ibid.*, article 6(6).

193. *Ibid.*, article 6(5).

194. *Ibid.*, article 7(1).

195. *Ibid.*, article 7(2–3).

196. *Ibid.*, article 7(4–6).

197. *Ibid.*, article 8(1).

198. *Ibid.*, article 8(2).

199. *Ibid.*, article 11.

200. See generally Szekely, *supra* note 39. Most recently, Canada and France signed an agreement that provides a management regime for hydrocarbon exploration and exploitation off the coasts of Newfoundland, Labrador and Nova Scotia, and the French islands of St. Pierre et Miquelon. The agreement provides for an information exchange in the transboundary area, mechanisms for identifying transboundary fields and sharing benefits, and procedures for negotiating unitization agreements for specific fields. The full agreement has not been released to the public awaiting domestic regulatory changes required for its implementation. Foreign Affairs and International Trade Canada, Canada and France to Work Together in Atlantic Waters, News Release #87, May 17, 2005, available at [w01.international.gc.ca/minpub/Publication.aspx?isRedirect=True&publication\\_id=382568&Language=E&docnumber=87](http://w01.international.gc.ca/minpub/Publication.aspx?isRedirect=True&publication_id=382568&Language=E&docnumber=87). See also Francis N. Bochway, *The Context of Trans-Boundary Energy Resource Exploitation: The Environment, the State, and the Methods*, 14 *Colo. J. Int'l. Envtl. L. and Pol'y*, 191, pp. 232–240 (comparing the Frigg Field Reservoir Agreement and the Gabcikovo-Nagyvaros System of Locks Treaty.)

201. See *supra* notes 67–71 and accompanying text.

202. Shields, *supra* note 7, at 6.

203. *Supra* note 24.

204. See Szekely, *supra* note 39, at 735–736 (arguing that the term “shared” resource should only be used to describe physical or ecological phenomenon and that “transboundary” is the only term that adequately reflects the sovereignty a state has over its resources).

205. Shields, *supra* note 7, at 5.

206. Duncan Kennedy, *Tightrope Awaits Mexico's Calderon*, BBC News, Sept. 7, 2006, available at [news.bbc.co.uk/2/hi/americas/5322360.stm](http://news.bbc.co.uk/2/hi/americas/5322360.stm).

207. *Id.*

208. Pub. L. 83–212; 43 U.S.C. §§1331 et seq.

209. UNCLOS, *supra* note 65, article 78(1).

210. Little judicial guidance on these issues has been provided to date and any answer is necessarily case specific. However, the U.S. Supreme Court expressed its willingness expand the availability of restitution in *Mobil Oil Exploration & Producing Southeast, Inc. v. United States*, 530 U.S. 604 (2000). This case held that the federal government must compensate two oil companies after the government repudiated its offshore lease contracts by delaying its permission for the oil companies to begin exploration. According to the Supreme Court, “we find that the oil companies gave the United States \$158 million in return for a contractual promise to follow the terms of pre-existing statutes and regulations. The new statute prevented the Government from keeping that promise. . . and therefore the Government must give the companies their money back.” *Id.* at 624. See generally, Deena B. Bothello, *An Unequal Balance: Repudiation and Restitution in Mobil Oil Exploration & Producing Southeast, Inc. v. United States*, 80 *Ore. L. Rev.*, 1469 (2001).

211. The question of whether NEPA must be applied extraterritorially is the subject of dozens of law journal articles. For a flavor of this scholarship, see Lois J. Shiffer, *The National Environmental Policy Act Today, With an Emphasis on its Application across U.S. Borders*, 14 *Duke Env. L. and P. Forum*, 325 (2004) and Browne C. Lewis, *It's a Small World After All: Making the Case for the Extraterritorial Application of the National Environmental Policy Act*, 25 *Cardozo L. Rev.*, 2143 (2004). Given the fact that none of the branches of government have reached a definitive conclusion regarding the conditions under which NEPA must be applied extraterritorial, it is difficult to predict if it will be applied to transboundary hydrocarbon resources along the U.S.-Mexico border or in the Western Gap. The extraterritorial application of many other U.S. environmental laws is equally baffling.