IN THE MATTER OF AN ARBITRATION UNDER CHAPTER 11 OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE UNCITRAL RULES (1976)

ICSID Case No. UNCT/20/1

Odyssey Marine Exploration, Inc. (USA)

Claimant

v.

The United Mexican States

Respondent

Claimant's Reply

29 June 2021

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Table of Contents

Page

Table of Contents
(continued)

Page

Table of Contents
(continued)

Page

Table of Contents
(continued)

Page

1. Claimant Odyssey Marine Exploration, Inc. ("**Claimant**" or "**Odyssey**") hereby submits its Reply in this arbitration brought by Odyssey on its own behalf and on behalf of Exploraciones Oceánicas S. de R.L. de CV ("**ExO**"), the project vehicle for the Don Diego Phosphorite Project, which it majority owns and controls, against the United Mexican States ("**Respondent**" or "**Mexico**") under Chapter 11 of the North American Free Trade Agreement ("**NAFTA**" or the "**Treaty**").

I. INTRODUCTION

2. Claimant's Memorial confronted the Government of Mexico with scientific evidence and the first-hand testimony of witnesses establishing that, in breach of NAFTA, ExO's environmental application (the MIA) was denied not on the basis of legitimate environmental considerations, but on the basis of the personal political motivations and personal conflicts of Secretary Pacchiano.

3. The testimony came from [redacted]

4. Rather than confront that evidence on the merits, Mexico has either ignored Odyssey's evidence or sought to diffuse it with intimidation, threats, reputational attacks, and spurious legal arguments.

5. Notably, Mexico has provided no contemporaneous documentary nor witness evidence about the evaluation of the Project.

6. *First*, Mexico attempts to silence the whistleblower witnesses who came forward and offered credible testimony confirming that the decision denying the MIA was manifestly arbitrary and not made in good faith, obviously because their testimony—demonstrating that the scientific evaluation had confirmed the Project was environmentally sustainable and should be approved with the implementation of the mitigation measures proposed by ExO—on its own establishes Mexico's liability.

7. *Second*, Mexico attempts to sidestep the evidence of Secretary Pacchiano's political interference by arguing that the Secretary had no authority over or involvement with the Secretariat's decisions. This argument is not only absurd on its face, but legally wrong.

8. *Third*, Mexico ignores altogether the scientific evidence establishing that Mexico's denial *could not have been* based on legitimate environmental considerations because there was no valid basis for denying the Project. In particular, Mexico has no response to the evidence showing that SEMARNAT's purported grounds for denial, the alleged impact on sea turtles, is so baseless that it can only have been pretext. This is demonstrated by SEMARNAT's own study on the resilience of *Caretta caretta* sea turtles in the Gulf of Ulloa completed by June 2016, a study that was not referenced in SEMARNAT's denial of the Project, nor in Mexico's evidence in these proceedings.

9. *Fourth*, Mexico attempts to impugn Odyssey's reputation with specious and irrelevant allegations that Odyssey did not have the financial resources or technical expertise to execute the Project—notwithstanding the fact that neither imputation formed any part of the reasons provided for either denial. They are also manifestly inconsistent with the evidentiary record.

10. Odyssey enlisted world-class dredging and environmental experts to develop sustainable dredging operations using proven technology and fully mitigate environmental risks (*e.g.*, Royal Boskalis Westminster R.V. ("**Boskalis**"), Mr. Craig Bryson, Dr. Richard Newell, and Dr. Doug Clarke). Respondent's attack on Odyssey's capabilities wholly ignores that expertise, in addition to ignoring Boskalis' experience in Mexico.

11. Odyssey did exactly what was required to advance the Project—it assembled a consortium of experts with world-class capabilities. Rather than confronting this fact, Respondent instead relies on hyperbolic, *ad hominem* attacks, ignoring the fact that the Project would have deployed proven dredging and processing techniques whose potential environmental impacts were well understood and fully capable of mitigation or prevention and which have been used in Mexico in much more sensitive environments.

12. *Fifth*, and again without engaging with Odyssey's expert evidence to the contrary, Mexico exaggerates the size of the Project, with the Counter-Memorial conveying[1] the misleading impression that the Project somehow affects large swathes of the Gulf of Ulloa (19,893.9 km^2) when only 1 km^2 per year would have been dredged and ExO would have actively managed seabed recovery. The tiny dredging area by comparison to the Gulf of Ulloa is shown as a red line in the diagram at the end of the introduction (reproduced from **C-0193** to Odyssey's Memorial).

13. As for damages, Mexico accepts that the standard for compensation in these proceedings is full reparation and further agrees that full reparation requires an award of ExO's fair market value,[2] which here is equivalent to the Project. Rather than meeting the case put before it, however, Mexico and its experts pretend the substantial evidence Claimant adduced with its Memorial in support of quantum does not exist. World-leading experts in their respective fields have evaluated the Project as it existed on the date of valuation, using Project-contemporaneous data and information, and concluded the Project was at the prefeasibility level. Claimant's valuation expert, Compass Lexecon, is clear that the Project can and should be valued using an income approach.

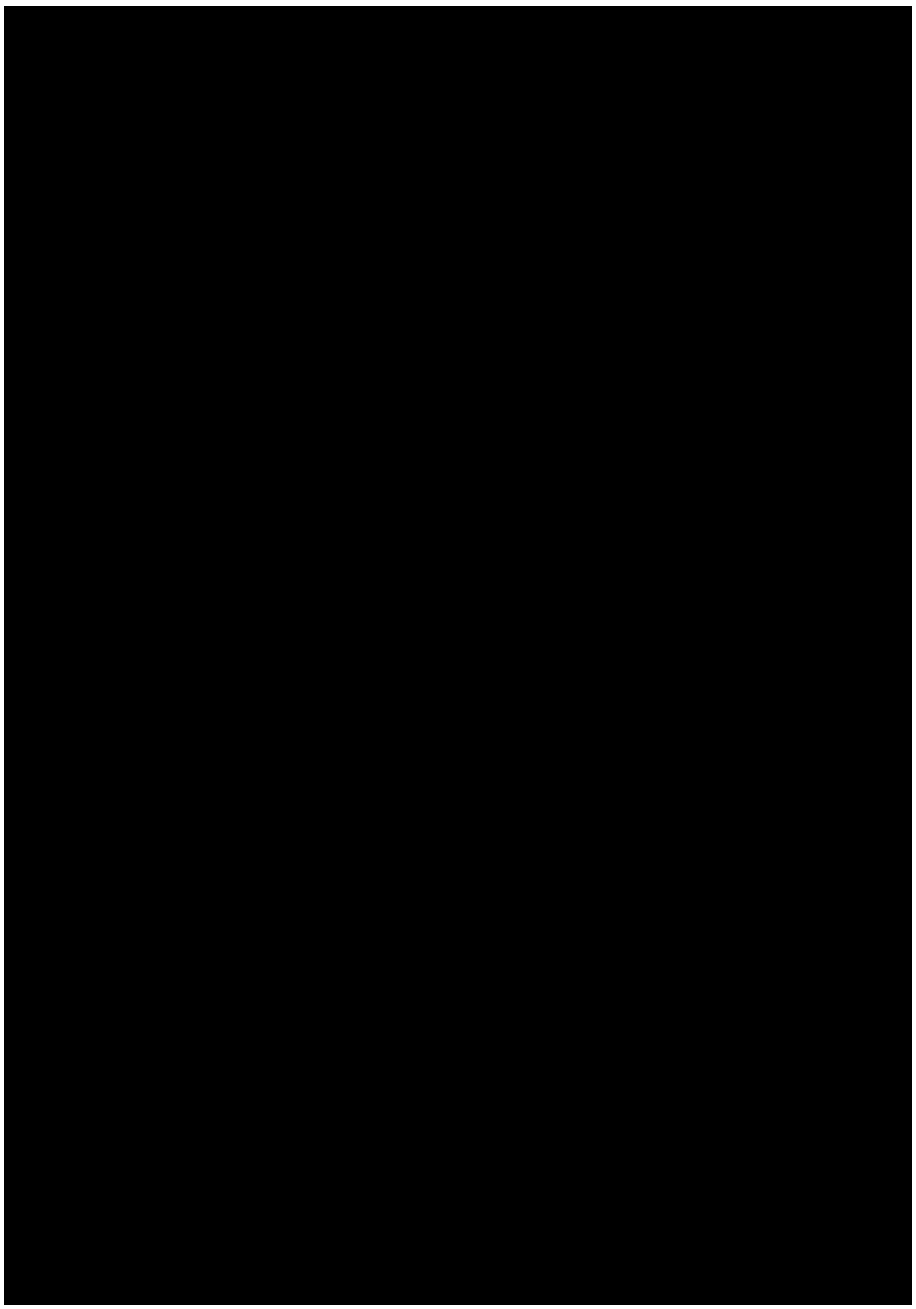
14. Mexico and its valuation expert, Quadrant Economics ("**Quadrant**"), try but fail to rebut Compass Lexecon's valuation. And in the end, Quadrant advances an evaluation that purports to be based on Odyssey's market capitalization, which rests on the fanciful theory that a television show in which Odyssey is not even mentioned caused a temporary bump in the price of Odyssey's stock.

15. For the reasons set out in Section V below, full reparation requires Odyssey and ExO to be awarded damages of [redacted] as calculated by Compass Lexecon using a discounted cash flow analysis, plus a strategic value premium on that amount of [redacted] plus [redacted] reflecting the value of the lost exploration opportunity, plus pre-award interest at the rate of 13.95% (using the weighted average cost of capital of a typical

[1] For example, Respondent's Counter-Memorial, ¶¶ 84-96, 526.

[2] Respondent's Counter-Memorial, ¶¶ 628-633.

investor in a pre-operational mining project in Mexico), plus post award interest, and the costs of the arbitration.



[redacted]

[3] **C-0193**, Odyssey Graphics, Original and Reduced Concession, 28 July 2020, Figure 4.

II. FACTS

A. Mexico's Environmental Position

16. In its Counter-Memorial, Mexico asserts that:

    a. SEMARNAT appropriately analyzed, heard, and resolved a request for an environmental impact authorization and determined that the Project was not environmentally sustainable in accordance with Article 35 of LGEEPA.[4]

    b. In these proceedings, Odyssey asks the Tribunal to serve as a Court of Appeal or an environmental authority analyzing ExO's MIA afresh.[5]

    c. The Tribunal should defer to SEMARNAT's regulatory actions, as they are police powers invoked to protect the environment and are not susceptible to challenge under NAFTA.[6]

17. The evidence in the record of what actually happened demonstrates that these assertions are wholly unsustainable. Odyssey is not seeking to appeal an adverse environmental decision, nor is it asking the Tribunal to determine the MIA afresh. Mexico breached NAFTA's investment protections because SEMARNAT did not objectively and appropriately determine ExO's MIA. Instead, a political appointee overrode the SEMARNAT scientists' determination that the Project was environmentally sustainable and should be conditionally approved. As there was no legitimate scientific basis to deny the MIA, he simply ordered them to "find a reason" to do so.[7]

18. The result was that the DGIRA issued a Denial asserting that the Project would impact protected sea turtles, contrary to the facts, evidence, and its scientists' own evaluation. That explanation was founded in a manifestly wrong interpretation of studies on *Caretta caretta* density and in a manifestly wrong interpretation of Mexican domestic legislation that was both contrary to its previous practice and contrary to its own previously undisclosed study.

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4 *See*, *for example*, Respondent's Counter-Memorial, ¶ 4.

5 *See*, *for example*, Respondent's Counter-Memorial, ¶¶ 4-5.

6 Respondent's Counter-Memorial, ¶¶ 452, 519, 522, 560-561.

7 [redacted]

B. Mexico's 2016 and 2018 Denials Were Not Based on a Legitimate Application of Domestic Environmental Law

1. Respondent's Interpretation of Article 35(III)(b) Is Manifestly Wrong and Directly Contradicts SEMARNAT's Practice and Application

19. There is actually significant common ground between Odyssey and Mexico regarding the basis under which a MIA can be denied under Mexican law and the basis under which ExO's MIA was denied. The dispute is whether the scientific and other factual evidence demonstrates that the Project was illegitimately denied.

20. The parties agree that the applicable legal test under Mexican law for denying, approving, or conditionally approving a MIA is set out in Article 35(III) of LGEEPA.[8] A MIA may be denied under this provision only: (i) where the project contravenes Mexican laws or regulations; (ii) where it may cause a species to be declared as endangered or where the project will affect an already endangered species; or (iii) where the MIA contains false information.[9]

21. Mexico's Counter-Memorial also makes clear that it agrees the legal justification given by the DGIRA in its 2016 and 2018 Denials was that the Project would affect endangered sea turtles, primarily *Caretta caretta*, within the meaning of Article 35(III)(b) of LGEEPA, and that the Project was denied under that provision alone.[10] Whilst much of DGIRA's reasoning in the 2016 and 2018 Denials is opaque (Odyssey asserts deliberately so in circumstances where the scientific evaluation concluded the MIA should be conditionally approved),[11] this means that the debate about environmental issues that do not affect sea turtles is irrelevant, as they were not the grounds upon which SEMARNAT denied ExO's MIA under Article 35(III)(b) of LGEEPA.

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8 Claimant's Memorial, ¶ 86; **C-0014**, LGEEPA, 5 June 2018, art. 35; Herrera ER1, ¶ 19; Respondent's Counter-Memorial, ¶ 168 (citing SOLCARGO ER, ¶¶ 110-113).

9 **C-0014**, LGEEPA, 5 June 2018, art. 35(III).

10 Claimant's Memorial, ¶¶ 152-154, 175, and Annex B to Claimant's Memorial, ¶ 1; [redacted]; Respondent's Counter-Memorial, ¶¶ 6, 320-323, 332, 366; **C-0014**, LGEEPA, 5 June 2018, art. 35(III)(b).

11 *See* Annex B to Claimant's Memorial.

22. There is a dispute as to whether the DGIRA is entitled to deny a MIA under Article 35(III)(b) only when proposed activities would adversely affect an endangered species as a whole (as Odyssey asserts),[12] or when those proposed activities would affect a few individuals of an endangered species (as Mexico asserts).[13]

23. Including the opening words of the clause, Article 35(III)(b) reads as follows:[14]

> Once the environmental impact study is evaluated, the Secretary will issue the corresponding resolution, duly based and motivated by the law, in which it will:
> . . .
> III. Deny the authorization requested when:
> . . .
> b) The project or activity under consideration may cause one or more species to be declared endangered or in danger of extinction **or when it affects one of these species**.

24. The obvious meaning of these words is that a MIA may be denied under Article 35(III)(b) only when a project requiring approval will have **a species-level impact** of causing that species to be declared endangered or in danger of extinction. As explained by Dr. Hector Herrera,[15] the clause focuses on the effects on a "species," defined under Mexican law to reflect the international consensus that a species is "[t]he basic unit of taxonomic classification composed of **a set of individuals** capable of reproducing among themselves and generating fertile offspring, sharing physiognomic, physiologic and behavioral features."[16] This definition makes clear that species and individuals are separate concepts.[17] The 2018 Denial itself recognizes this distinction.[18]

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12 Claimant's Memorial, ¶¶ 263-268; Herrera ER1, ¶ 56.

13 Relying on SOLCARGO ER, ¶¶ 188-190.

14 **C-0014**, LGEEPA, 5 June 2018, art. 35(III)(b) (emphasis added).

15 Herrera ER1, ¶¶ 19-21, 56; Second Expert Report of Hector Herrera, dated 21 June 2021 ("**Herrera ER2**"), ¶¶ 7, 49-67.

16 **C-0463**, Norma Oficial Mexicana NOM-059-SEMARNAT-2010, 30 December 2010, p. 5 (free translation; emphasis added), cited in Herrera ER2, ¶ 57.

17 Herrera ER1, ¶ 56; Herrera ER2, ¶ 58.

18 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 217.

25. As Messrs. Herrera note, that is how SEMARNAT itself has previously interpreted Article 35(III)(b).[19] Mexico has not challenged Mr. Herrera's evidence on this point. For instance, in its decision on the Puerto de Manzanillo Project, SEMARNAT determined that even though the project may affect several individuals of a protected species, "the species represented in the environmental system are widely represented in the Marshes national system . . . in the State of Colima so that when vegetation is lost, only individuals and not species are being lost, and the typical ecosystem is not under risk."[20]

26. The DGIRA has consistently adopted the Puerto de Manzanillo standard, applying it in at least nine other projects between 2015 and 2020 when evaluating MIAs.[21]

27. Mexico's expert, SOLCARGO, asserts that Odyssey's interpretation of Article 35(III)(b) is incorrect, and that the DGIRA may deny a MIA when a project will affect several individuals of a threatened or endangered species.[22]

28. Importantly, SOLCARGO caveats this interpretation as follows: "[c]ontrary to the Claimant's expert's argument, such an impact would be verified even if it occurs on a few specimens, **to the extent that the biological viability of the species is [compromised]**."[23]

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19 Herrera ER1, ¶ 56; Herrera ER2, ¶¶ 63-64.

20 Herrera ER1, ¶ 56, citing **HH-0009**, Oficio S.G.P.A./DGIRA.DDT,-1383.05, 22 November 2005, p. 101.

21 Herrera ER2, ¶¶ 63-64; **C-0345**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Operación y abandono del recinto minero El Concheño," 22 May 2015, p. 56; **C-0346**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Operación y abandono del recinto minero Tayahua," 9 May 2016, pp. 44-45; **C-0348**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Desarrollo Recinto Minero Ana Paula," 3 April 2017, pp. 78-79; **C-0349**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Proyecto de Explotación Minera 'Los Gatos', Satevó, Chihuahua," 17 July 2017, p. 95; **C-0350**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Central La Jacaranda," 2 August 2017, pp. 39-40; **C-0351**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Plantas Metalúrgicas," 17 April 2018, p. 67; **C-0352**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Planta CIL Los Filos," 29 August 2018, pp. 43-44; **C-0353**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Proyecto Minero Monterde," 2019, p. 90; **C-0354**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional (MIA-R) del Proyecto, "Unidad Minera Charcas de Industrial Minera México, S.A. de C.V.," 16 July 2020, p. 52.

22 SOLCARGO ER, ¶ 188.

23 SOLCARGO ER, ¶ 188 (emphasis added); while the original translation provided by Respondent reads "violated" rather than "compromised," Claimant believes that "compromised" is the more accurate translation.

Odyssey does not dispute that caveat, which accepts and reiterates that a MIA can be denied on these grounds only if a project affects a species as a whole.[24]

29. SOLCARGO seeks to undermine Odyssey's interpretation by suggesting that it equates an "impact on a species" with an impact which directly affects each and every individual of a species.[25] That is plainly not what Odyssey suggests. In his Second Expert Report, Professor Flores-Ramírez contrasts *Caretta caretta* with the critically endangered vaquita porpoise, *Phocoena sinus*, which has an estimated remaining population of approximately 33 individuals.[26] In that case, the death of a single individual could further reduce the viability of the species, without the event affecting each and every one of the surviving individuals.[27] That is not the case of the *Caretta caretta* species, which is distributed over 10 populations in tropical and temperate waters of the Atlantic, Pacific, and Indian Oceans, and in the temperate waters of the Mediterranean Sea,[28] as well as over a wide area of the Gulf of Ulloa.[29]

30. The fact that the Denials were not properly based on the correct and hitherto standard application of Mexican law demonstrates that other factors drove SEMARNAT's Denials. Those factors were Secretary Pacchiano's political and personal motives to deny the Project.

2. SEMARNAT's Own Previously Undisclosed Study Demonstrates That the Project Does Not Jeopardize the *Caretta caretta* Species

31. As explained below, Claimant's unchallenged factual and expert evidence is that the Project is unlikely to affect *Caretta caretta* sea turtles. Dr. Douglas Clarke states that, "given the depth of the dredging, the rarity of turtles actually being present near or on the seabed in the area being dredged, and the protection measures that would be

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24 It could apply, for example, where there were only a small number of individuals of a species remaining in a small area, as was the case with the 33 vaquita marina whales referred to in the Second Expert Report of Sergio Flores-Ramírez, dated 24 June 2021 ("**S. Flores ER2**"), ¶¶ 32-33.

25 SOLCARGO ER, ¶ 189.

26 S. Flores ER2, ¶¶ 32-33.

27 S. Flores ER2, ¶ 32.

28 S. Flores ER1, ¶¶ 14-15.

29 S. Flores ER1, ¶¶ 14, 22; S. Flores ER2, ¶ 16.

implemented, there is a very high probability of no turtle mortalities being caused by the Project, or mortalities averaging less than two a year, in line with the shallower projects that have been monitored in North America."[30] Professor Flores-Ramírez states that the "possibility of the Project causing the death of any *C. caretta* individual is remote."[31]

32. Demonstrating its commitment to this assessment, and as part of recognizing that risk can never be completely eliminated, ExO had proposed a limit of five *Caretta caretta* mortalities per annum,[32] with any mortality being reported to SEMARNAT and prompting a reevaluation of the sufficiency of management practices.[33] Operations would stop if the limit was reached.

33. SOLCARGO gives evidence that "any anthropogenic affectation suffered by an individual of the species puts the survival of the species at risk."[34] This seeks to equate an individual of a protected species with the survival of the species as a whole. This argument is an after-the-fact justification for the 2018 Denial that has no foundation in the contemporaneous analysis, nor in the prior decision-making process. SEMARNAT did not

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30 Clarke WS, ¶ 74.5.

31 S. Flores ER1, ¶¶ 29, 113.

32 This was an extremely conservative number since ExO did not expect to affect any *Caretta caretta* turtles at all. Indeed, in its Additional Information, the company stated: "**Given the comprehensive knowledge of the characteristics of the dredging processes and the steps that can be taken to minimize possible catches, the technical team believes that a reasonable preliminary bycatch limit would be five (5) sea [Loggerhead] turtles *Caretta caretta* per year of operation, although it is expected that there will be no bycatch of turtles. It would be feasible for the observer to make daily reports to be sent electronically to a centralized compiler either through a regulatory entity or by the staff designated by SEMARNAT for this purpose**. The compiler would be responsible for alerting the person in charge of any capture report. A single capture would trigger an intense inspection of the operation of the vessel at the time of capture in order to discern the probable cause thereof. For example, climatic conditions justify changes in operations that may lead to greater dredging risks. A single capture would represent an extremely rare event." **C-0005**, Additional Information, 3 December 2015, p. 408. Mr. Clarke further acknowledges: "I offered this number solely based on my professional opinion as a conservative estimate intended to set a reasonable maximum limit, should SEMARNAT wish to set a limit for the number of allowable turtle mortalities per year as a conditional approval of the MIA, reflecting the U.S. Biological Opinions. In my view, given the depth of the dredging, the rarity of turtles actually being present near or on the seabed in the area being dredged, and the protection measures that would be implemented, there is a very high probability of no turtle mortalities being caused by the Project." Clarke WS, ¶¶ 74.4-74.5.

33 Clarke WS, ¶¶ 67.9, 74.4-74.6, 78.3; **C-0005**, Additional Information, 3 December 2015, p. 408.

34 SOLCARGO ER, ¶ 188.

suggest as a factual matter in the 2016 and 2018 Denials that the death of an individual *Caretta caretta* would affect the species as a whole.

34. Mexico's "evidence" in these proceedings—to support the proposition that impacting an individual *Caretta caretta* would put the entire species at risk—has been provided by a lawyer. It is unsupported by any expert evidence from qualified experts, such as biologists.[35]

35. Moreover, as demonstrated by a contemporaneous study conducted by SEMARNAT itself—and to which the SOLCARGO lawyers do not refer—Respondent's "evidence" is also flat-out wrong. Rather, references to the SEMARNAT study appeared in technical opinions disclosed in these proceedings by Mexico only in response to Claimant's Request to Produce.[36]

36. Professor Flores-Ramírez summarizes the results of the SEMARNAT study.[37] It was carried out in the context of restrictions imposed by SAGARPA (the Mexican Fishing and Agricultural Ministry) on fisheries in the Gulf of Ulloa in June 2016.[38] As explained in Professor Flores-Ramírez's First Expert Report, these restrictions were imposed because of the high mortality of *Caretta caretta* as fishing bycatch.[39] As part of a series of protective measures, mortality of *Caretta caretta* by fisheries was limited to a maximum of 90 individuals per year. Fishing must stop if this limit is reached.[40] SOLCARGO ignores this bycatch limit when giving "evidence" about the impact that the death of an individual *Caretta caretta* would have on the species. Instead, they refer only to the administrative act that established the associated fishing refuge.[41]

37. The rationale for this bycatch limit was explained in Technical Opinions issued by INAPESCA, dated 23 March 2015 and 3 June 2016 (and disclosed by Mexico only in

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35 SOLCARGO ER, ¶ 307, states that Section VII of the report, where this discussion on the effect on a species is explored, was drafted by Mr. Carlos Federico del Razo Ochoa, who is a lawyer.

36 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016.

37 S. Flores ER2, ¶¶ 11, 33-37.

38 S. Flores ER1, ¶¶ 29, 102; **C-0010**, Diario Oficial, 23 June 2016, pp. 1-2, 5.

39 S. Flores ER1, ¶¶ 17, 102.

40 S. Flores ER1, ¶ 102; **C-0010**, Diario Oficial, 23 June 2016, p. 5.

41 SOLCARGO ER, ¶¶ 193-196; **C-0010**, Diario Oficial, 23 June 2016, pp. 1-2.

response to Odyssey's Request to Produce).[42] The limit, which was developed internally by SEMARNAT officials, was based on modelling of the *Caretta caretta* population's vulnerability to fishing bycatch. The model assessed the risk that bycatch mortalities would contribute to a reduction in the size of the *Caretta caretta* population over 100 years.[43] SEMARNAT's modelling is contained in a report entitled "Sustainable fishing exploitation and protection of the loggerhead sea turtle in the Gulf of Ulloa."[44]

38. SEMARNAT concluded that mortality of 200 individuals per year would have no impact on the *Caretta caretta* population over 100 years.[45] As a result, SEMARNAT proposed that *Caretta caretta* bycatch should be limited to 200 individuals per year, determining that exceeding this limit could result in an unacceptable risk of losing 25% of the *Caretta caretta* population over 100 years.[46] This limit was adopted in a subsequent policy,[47] signed by Secretary Pacchiano himself, which implemented a Regional Program for the Ecological and Marine Management in the North Pacific, and which adopted a biodiversity guideline[48] stating: "the results of our forecast indicate that a mortality above 200 individuals a year of loggerhead turtles, caused by anthropogenic actions in the Gulf of Ulloa, translates to a level of risk which is unacceptable for the viability of the species in the long term."[49]

39. SEMARNAT's study was not referenced in the 2016 and 2018 Denials, despite its obvious and central relevance to the assessment of whether the Project would affect *Caretta caretta* as a species, despite the TFJA's instruction to SEMARNAT to assess the Project's MIA using "the most reliable scientific data available,"[50] and despite the Denial itself referencing the Fishing Refuge Zone.[51]

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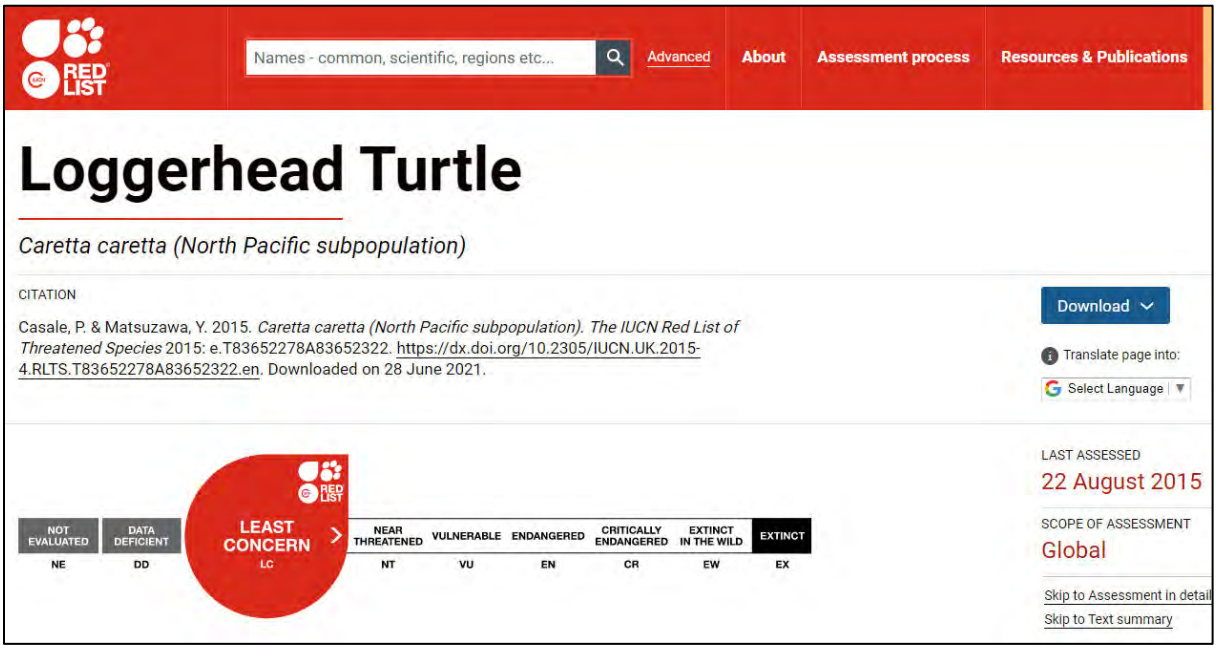
42 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016.
43 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, pp. 8-9.
44 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, p. 8, fn. 7.
45 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, pp. 8-9.
46 **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, p. 9.
47 **C-0438**, Diario Oficial de la Federación, 9 August 2018.
48 **C-0438**, Diario Oficial de la Federación, 9 August 2018, p. 140.
49 **C-0438**, Diario Oficial de la Federación, 9 August 2018, p. 140 (free translation).
50 **C-0170**, TFJA Ruling, 21 March 2018, p. 212 (free translation).
51 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 271.

40. Nor is SEMARNAT's study referenced in Respondent's Counter-Memorial, nor even in SOLCARGO's expert report. The reasons are obvious: the study shows the kind of work that SEMARNAT can undertake to assess species-level impact, proves that such an assessment had been carried out on *Caretta caretta*, and demonstrates unequivocally that SEMARNAT's Denial of the Project on the basis of its purported impact on *Caretta caretta* was baseless and ignored the contemporaneous evidence that demonstrated the Project would have no impact (as does Mexico's *post hoc* attempt to justify the Denial in its Counter Memorial).

41. In his Second Expert Report, Professor Flores-Ramírez summarizes the objective scientific evidence relied upon by the International Union for Conservation of Nature (IUCN) when deciding in 2015 that the conservation status of *Caretta caretta* had improved from "endangered" to "vulnerable."[52] That study describes the North Pacific population (which includes Mexico) as being of "least concern" since 2015 (see below):[53]



52 S. Flores ER2, ¶¶ 26-27.

53 S. Flores ER2, ¶ 27; **C-0384**, IUCN Redlist, Loggerhead Turtle, *Caretta caretta* (North Pacific subpopulation), 22 August 2015, p. 1.

42. Professor Flores-Ramírez also describes how biologists assess the biological viability of a species.[54] Here, both the global and Gulf of Ulloa populations of *Caretta caretta* are many multiples higher than the minimum number required to ensure a 99% probability of the population surviving for 40 generations (with an average generation of 45 years).[55]

43. In summary, therefore, the impact of the Project on *Caretta caretta* turtles was properly addressed in the MIA and, with the mitigation measures put in place, it was very unlikely that there would have been any turtle mortalities. In any event, ExO committed to cease operations if there was mortality of five individuals in any year,[56] at which point operations would cease. The Project was significantly lower risk than other projects approved by SEMARNAT, as described by Mr. Pliego,[57] and could not impact the viability of the species, as SEMARNAT's own study demonstrated. Turtles were a pretext for the Denials.

3. Odyssey's Scientific Evidence—Which Mexico Ignores—Established That the Project Could Not Have Been Denied on Environmental Grounds, Given the Lack of Environmental Impact

44. Mexico has not engaged with, and therefore does not challenge, the expert reports and evidence submitted by Odyssey from experienced biologists and other scientists which comprehensively address the potential environmental impacts described by SEMARNAT in the 2018 Denial.[58]

45. First, Mexico does not challenge the Expert Reports prepared by Deltares,[59] a globally respected and independent environmental institute. Deltares concludes that the Project would have used proven technology with well-established techniques to minimize

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54 S. Flores ER2, ¶¶ 10, 27-31.

55 S. Flores ER2, ¶¶ 10, 27-31.

56 **C-0005**, Additional Information, 3 December 2015, p. 408.

57 Pliego ER1, ¶¶ 318-332; Second Expert Report of Vladimir Pliego, dated 24 June 2021 ("**Pliego ER2**"), ¶¶ 111-112, 117-120, and Annex 2.

58 Those impacts are summarized in Annex B to Claimant's Memorial, in the absence of any useful summary in the 2018 Denial (or, indeed, in Respondent's Counter-Memorial).

59 *See generally* Deltares ER1 and Deltares ER2.

potential environmental impacts (which are known and can be addressed),[60] the environmental impact of the Project would have been very limited,[61] the use of the Eco-tube was the best practice and would have allowed the Project to produce no effect on primary production,[62] and benthic (seabed) species directly affected in the "tiny" dredging area would recover.[63] For example, Deltares states:

a. "Overall, we tend to agree with the main conclusions of the MIA, that effects of the ExO project on the environment are likely to be very limited and that the carrying capacity of the Gulf of Ulloa for key species such as marine mammals, turtles and fish will not be affected."[64]

b. "Deltares supports the evaluation, reasoning and conclusions on the technical and operational feasibility of the phosphate sands extraction process. The approach proposed is a well-established work method, using a Trailing Suction Hopper Dredge (TSHD) with well-tested techniques to minimize environmental impact."[65]

c. "[T]railing suction hopper dredging can also be considered a standard, mature and proven technology in offshore mineral extraction and deeper waters."[66]

d. "The sediment plume has a limited impact on key benthic species," "[b]enthic recovery will occur over time," and "[e]ffects on the benthos are confined to the ADA[67] and immediate vicinity."[68]

e. The Eco-tube is "the best option to avoid any sediment release and thereby turbidity clouds in the water column,"[69] and use of the Eco-tube "completely prevents dispersal of any dredge material into the euphotic zone," meaning "it is clear that there can be no effect on primary production, either by reducing light

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60 Deltares ER1, Section 6, p. 41. The proven nature of the technology is also confirmed by Dr. Selby and Mr. Bryson. *See* Selby ER1, ¶¶ 32, 109, 112-113; Bryson WS1, ¶¶ 106, 158-60, 172, 175-180; Second Expert Report of Dr. Ian Selby, dated 29 June 2021 ("**Selby ER2**"), ¶¶ 25-27; **C-0204**, Boskalis Project Sheet, Gorgon Project – Barrow Island LNG Plant, September 2013.

61 Deltares ER1, Section 6, pp. 41-42.

62 Deltares ER1, Section 6, p. 41.

63 Deltares ER1, Section 6, p. 41; *see also, for example,* Section 4.1.3, p. 23, and Section 4.5, pp. 32-33. The growth of phytoplankton is the basis of the marine food web: *see* definition of "primary production" in the glossary in Deltares ER1, Annex A, p. 46.

64 Deltares ER1, Section 2, p. 12.

65 Deltares ER1, Summary, p. 5.

66 Deltares ER1, Section 3.5, pp. 16-17.

67 "ADA" is the acronym for "Active Dredging Area."

68 Deltares ER1, Section 6, p. 41.

69 Deltares ER1, Section 3, p. 13.

availability or by increasing phosphate levels."[70] Further, the area impacted by a plume would be "very small."[71]

f. "What is also clear from Annex 9 [of the MIA] is that the size of the area impacted by the plume when releasing excess sediment through an eco-pipe is tiny with respect to the SAR[72] as the plume impacts an area less than a kilometre from the source in a SAR of 17,737 km^2."[73]

g. "For pelagic fish species the impact is negligible as food production takes place in the upper layers above the pycnocline and productivity there is not affected."[74]

h. "The red crab is not listed as being under threat. . . . It is particularly the pelagic juvenile and young adult stages, living in the upper layers of the water column, that provide a major food source for . . . turtles . . . The habitat of the pelagic stages does not appear to be affected. . . . The main conclusion is therefore that the population of red crab *P. planipes*[] in and around the Gulf of Ulloa is unlikely to be affected by the proposed activities."[75]

46. In addition, Deltares explains why the mining activities described in papers on deep seabed mining referenced by SEMARNAT in the 2018 Denial are not relevant to ExO's Project, as the activities covered in those papers focus on "deep/abyssal sea mining using different techniques in different habitats to mine polymetallic nodules, cobalt crusts, and seabed massive sulfides associated with hydrothermal vents. These habitats typically exist below 2000 m. . . . This is in contrast with the mining technique being applied in the ExO project, which is well understood, and [a] common approach used worldwide to dredge for maintenance purposes or to extract aggregates in far shallower water depths."[76] Mexico does not challenge this evidence, yet Mexico continues to seek in its

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70 Deltares ER1, Section 6, p. 41.

71 Deltares ER1, Section 4.1, p. 20.

72 SAR is the Spanish acronym for the Regional Environmental System, a concept explained at **R-0028**, Guía MIA Regional, DGIRA, p. 19.

73 Deltares ER1, Section 4.1.3, p. 23.

74 Deltares ER1, Section 4.5.1, p. 33.

75 Deltares ER2, Summary, p. 4.

76 Deltares ER1, Section 5.1, pp. 36-37, referring to the Miller Study (**C-0168**, K. A. Miller, et al., "An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps," Frontiers in Marine Science, ResearchGate, 10 January 2018).

Counter-Memorial to rely on the comparison to deep seabed mining, which, by any definition, the Project is not.[77]

47. In passing, WGM compares the Project with the Chatham Rise project in New Zealand and the Sandpiper project in Namibia, noting that their owners have been unable to obtain an environmental permit to commence operations.[78] This is irrelevant to the question of whether ExO's MIA was wrongfully denied, as the environmental and other considerations are very different.[79]

48. As Deltares explains, in comparison to ExO's Project, Chatham Rise is deeper (at depths up to 400 m compared to the Project's average depth of 80 m); extracts primarily phosphate nodules (hard rock, not sands); intends more extensive annual operations (about 30 km^2 per year, compared to 1 km^2 per year); and would take place in an area with a wide range of invertebrate species and cold water corals, with the latter recovering slowly and possibly not at all in certain areas.[80] As Dr. Selby points out, one reason that project was denied was because dredging was proposed "in a marine conservation zone defined as the Mid Chatham Rise Benthic Protection Area, which is protected from trawling and dredging."[81] The regulator for that project noted the potential for "destruction of potentially unique communities and rare and vulnerable ecosystems."[82]

49. Sandpiper intends to use similar dredging technology, but its project design differs considerably, with, for example, surface overflow of sediment from the dredger generating a plume in the water column (avoided by ExO in the Project through the Eco-tube), onshore processing of dredged slurry, and a one kilometer wide marine exclusion zone around an offshore buoy where the dredger would connect to a slurry pipeline.[83]

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77 *See, for example,* Respondent's Counter-Memorial, ¶¶ 524-525, 527.

78 WGM ER, ¶ 22 (cited in Respondent's Counter-Memorial, ¶¶ 65, 524).

79 *See* ¶¶ 460-465 below regarding the differences in geology, resource characteristics and other considerations.

80 Deltares ER1, Section 5.3, pp. 17-18. WGM does not engage with the Deltares report.

81 Selby ER2, ¶ 12. *See also* **C-0467**, Decision on marine consent application by Chatham Rock Phosphate Limited to mine phosphorite nodules on the Chatham Rise, EPA, February 2015, p. 2.

82 Quoted by SEMARNAT in **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 336.

83 **C-0468**, Sandpiper Project Environmental Impact Assessment Report, March 2012, pp. 88, 156 (referenced at WGM ER, ¶ 22, fn. 11); Selby ER2, ¶¶ 14-15.

Nonetheless, independent peer review for Namibia's Environment Commissioner of Sandpiper's environmental impact assessment (a review itself subject to independent review) endorsed the environmental sustainability of the Sandpiper project, concluding that "we can say that the information provided to us has convinced us that everything points to there being a minimal impact of the proposed operation, should a licence be granted, to the Namibian shelf ecosystem."[84] This peer review is the equivalent of the review process carried out by SEMARNAT's scientists, which approved the Project. Dr. Selby notes that "the extensive environmental studies undertaken as part of the Sandpiper Project have identified no major environmental issues at the site," but that one ongoing issue is that "the Namibian fishing industry contends that Sandpiper operations would occur in the heart of the fishing production area and that there is an objection to exclusion zones."[85] Accordingly, there is an ongoing legal challenge to the legitimacy of the owner's mining license by the Confederation of Namibian Fishing Associations and others.[86]

50. Second, Mexico does not challenge the Expert Report served by Professor Sergio Flores-Ramírez, a Mexican biologist who studies sea turtles and whales in the coastal waters of Baja California Sur and works for their conservation.[87] He concludes that there is a very low probability that *Caretta caretta* or other sea turtles would have been affected by the dredging or surface operations of the Project,[88] noting that the dredging would not take place in an area frequented by sea turtles,[89] nor in an area where their food sources are found.[90] He also endorses the effectiveness of the protection and mitigation measures

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84 Sandpiper Project Verification Programme, Executive Summary, p. 9, available at http://www.namphos.com/images/downloads/2014_Independent_Peer_Review_Report.pdf (referenced at WGM ER, ¶ 22, fn. 11).

85 Selby ER2, ¶ 15 (internal quotation marks omitted).

86 *See, for example*, Namibian Marine Phosphate Press Release: "Court Judgement Postponed," 17 June 2021, available at http://www.namphos.com/videos/media-releases/item/376-court-judgement-postponed.html (referenced at WGM ER, ¶ 22, fn. 11).

87 S. Flores ER1, ¶¶ 4-11.

88 *For example*, S. Flores ER1, ¶¶ 22-29.

89 S. Flores ER1, ¶¶ 25, 28, 128.

90 S. Flores ER1, ¶¶ 29, 128.

put in place to protect sea turtles.[91] His view is that the possibility that the Project would cause the death of any *Caretta caretta* individual was remote, and the risk would be minimal compared to the annual mortality quota of 90 permitted to fishermen[92] (or, consequently, the 200 mortality limit that SEMARNAT itself assessed).[93]

51. Further, Professor Flores-Ramírez notes that "[t]he potential impact of the Project on other turtle species is also considered minimal, since their distribution, habitat and diet determine that there is little to no probability of interacting with dredging operations."[94] His report concludes that SEMARNAT's view that the Project would affect sea turtles individually or as a species is clearly wrong.[95]

52. Third, Mexico does not challenge the evidence of Dr. Clarke,[96] a biologist who advised ExO after spending the bulk of his career at the U.S. Army Corps of Engineers (USACE), focusing on the environmental impacts of dredging and other coastal engineering projects and methods to avoid or mitigate those impacts.[97] Dr. Clarke's evidence is that the package of measures proposed by ExO to protect sea turtles represented the "gold standard for projects elsewhere"[98] and was "as comprehensive a package of protection measures as occurred anywhere in the world,"[99] even though "the scientific assessment determined that turtles would be encountered rarely if at all, because dredging in the Project would occur in waters where turtles are not likely to be found."[100] He based these conclusions on his experience with dredging projects in the United States and on detailed regulatory guidance issued in the United States, called Biological Opinions,[101] which

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91 S. Flores ER1, ¶¶ 26, 127.

92 S. Flores ER1, ¶ 29.

93 **C-0438**, Diario Oficial de la Federación, 9 August 2018, p. 140; **C-0347**, INAPESCA Technical Opinions, 23 March 2015 and 3 June 2016, p. 9.

94 S. Flores ER1, ¶ 28.

95 S. Flores ER1, ¶ 128.

96 *See, for example*, Claimant's Memorial, ¶¶ 103-106; Clarke WS, ¶¶ 57-80.

97 Clarke WS, ¶¶ 9-17.

98 Clarke WS, ¶ 80; **C-0154**, Doug Clarke mitigation measures email, 31 August 2016, p. 1.

99 Clarke WS, ¶ 80.

100 Clarke WS, ¶ 59.

101 **C-0191**, South Atlantic Regional Biological Opinion, 27 March 2020; **C-0036**, Gulf Regional Biological Opinion, 19 November 2003; **C-0037**, Gulf Regional Biological Opinion, Rev.1, 24 June 2005; **C-0039**, Gulf Regional Biological Opinion, Rev.2, 9 January 2007.

assess the impact of dredging on sea turtles and other protected species and specify a series of protective measures.[102]

53. Fourth, Mexico does not challenge the expert evidence[103] on the Project's sustainability given by Mr. Pliego,[104] a Mexican biologist and expert in the environmental impact assessment procedure and mitigation measures.[105] Mr. Pliego has been a public servant in various environmental roles within Mexico's government, including positions at SEMARNAT and as Director of Inspection and Surveillance of Protected Marine Areas and Species at PROFEPA.[106] He concludes that ExO's MIA is "more complete and detailed, particularly with regard to mitigation measures, than that of other MIAs and mitigation programs that I have been able to know in my professional activity, including my activity as a public servant at SEMARNAT,"[107] and, based on his enforcement experience, the mitigation measures proposed would be effective and could be adequately monitored by SEMARNAT.[108] To support this assertion, he cites, for example, the proposed measures to protect sea turtles[109] and the use of the Eco-tube to minimize plume dispersion and avoid any impact on primary production.[110] In his Second Expert Report, Mr. Pliego reiterates his view that the mitigation measures proposed by Odyssey contain proposals, goals, objectives, and actions directly linked to potential environmental impacts that can be monitored through a conditional authorization and adjusted if necessary.[111]

54. Mr. Pliego also agrees with Deltares that mitigation measures for dredging using TSHDs are well-understood,[112] and that benthic species would rapidly recover in dredged areas.[113] He concludes there would have been no reason to deny the Project based on its

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102 Clarke WS, ¶¶ 25-26.

103 Mexico does challenge his evidence comparing the Project to other approved dredging projects in Mexican coastal waters. *See*, *for example*, Respondent's Counter-Memorial, ¶¶ 396-397, 591-605.

104 *See generally* Pliego ER1.

105 Pliego ER1, ¶ 2.

106 Pliego ER1, ¶¶ 2-3.

107 Pliego ER1, ¶ 16.

108 Pliego ER1, ¶ 16.

109 Pliego ER1, ¶¶ 15, 19, 86-87, 127-128, 133-136.

110 Pliego ER1, ¶¶ 14, 21-22, 86-87, 137-141.

111 Pliego ER2, ¶¶ 55-75.

112 Pliego ER1, ¶¶ 14, 43, 86-87.

113 Pliego ER1, ¶¶ 13, 118-126.

impact on the seabed.[114] He also considers that the Project would have caused no impact on protected species,[115] nor on pelagic organisms or fishing.[116]

55. In its Counter-Memorial, Mexico relies on the fact that the Project would have been located within fishing concessions to assert that fishing would be affected[117] (without relying on any evidence that fishing would be affected). In his Second Expert Report, Mr. Pliego notes that fishing concessions cover practically all of Mexico's seas, and reiterates that the Project overlaps only marginally with the permitted fishing zones in which smaller fishing grounds are located and does not overlap at all with the fishing zones with the highest production.[118] Further, and critically, his unchallenged evidence in his First Expert Report is that the Project would not affect fishing for various reasons, including the fact that the bulk of pelagic fish in the Gulf of Ulloa are caught at depths much shallower than the dredging sites.[119]

56. Fifth, Mexico does not challenge those parts of the Witness Statement of Dr. Richard Newell, the Chief Scientist for the Project, dealing with the Project's environmental aspects.[120] Dr. Newell was[121] an internationally-recognized biologist with a long career evaluating and advising on the environmental impacts of the TSHD techniques to be used in the Project who, among other career achievements, served as the senior scientist to the United Kingdom's program assessing the environmental effects of dredging marine mineral deposits.[122] He helped Odyssey design the Project to "reflect the most recent advances in our understanding of managing the impacts of TSHDs," noting that this approach "had the full support of ExO and Odyssey."[123]

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114 Pliego ER1, ¶ 13.
115 Pliego ER1, ¶¶ 21, 209.
116 Pliego ER1, ¶¶ 22, 201-231.
117 Respondent's Counter-Memorial, ¶¶ 97-105, 242.
118 Pliego ER2, ¶¶ 24-54.
119 Pliego ER1, ¶¶ 22, 210, 220-225. *See also* Pliego ER2, ¶¶ 35-54, confirming that the Project would not have affected fisheries.
120 Newell WS, ¶¶ 3, 23-28.
121 Sadly, Dr. Newell died in February 2021 after being diagnosed with an aggressive form of cancer in late 2020.
122 Newell WS, ¶¶ 6-12.
123 Newell WS, ¶ 17.

57. Dr. Newell believed that ExO's MIA "comprehensively identified and addressed the relevant environmental impacts and contained a range of monitoring and mitigation provisions that met the best international standards and practices"[124] and concluded: "I have spent much of my professional life analysing the effects of dredging on the seabed and on the marine environment, and I clearly know when a dredging project will have a non-mitigatable impact on the environment. This Project will have no such impact."[125]

58. Critically, as well as ignoring Odyssey's expert evidence, Mexico also avoids addressing Claimant's submission that one of SEMARNAT's key arguments underpinning the Denial of the MIA (the density of *Caretta caretta* in the Project area) is manifestly wrong.[126] Mexico has now acknowledged this error in the ongoing TFJA proceedings.[127]

59. In both Denials, SEMARNAT erroneously justified its conclusion that *Caretta caretta* would be impacted as a species on the basis that academic literature demonstrates that there are one to 28 *Caretta caretta* turtles per km² in Polygons 1, 2, and 3 of the Project area and 54 to 85 *Caretta caretta* turtles per km² in Polygons 4 and 5 of the Project area.[128] This misrepresented data was actually showing the frequency of return of *Caretta caretta* individuals to particular areas.[129] In particular, SEMARNAT ignored the correct density figures in an academic paper defined as the Seminoff Study in Claimant's Memorial,[130] which was otherwise quoted at length by SEMARNAT in the 2018 Denial. Mexico continues to reference the inaccurate figures without qualification in its Counter-Memorial.[131]

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124 Newell WS, ¶ 45.

125 Newell WS, ¶ 46.

126 Claimant's Memorial, ¶¶ 272-273; *see also* Annex B to Claimant's Memorial, ¶¶ 11-12.

127 [redacted]

128 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, pp. 220-221; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 290-291, 295, 467, 471-472.

129 This is explained in S. Flores ER1, ¶¶ 22, 84 and Newell WS, ¶¶ 33-36. The frequency data is contained in **C-0038** S. Peckham, et al., "Small-Scale Fisheries Bycatch Jeopardizes Endangered Pacific Loggerhead Turtles," Plos ONE, 2007, p. 2.

130 **C-0072**, J.A. Seminoff, et al., "Loggerhead sea turtle abundance at a foraging hotspot in the eastern Pacific Ocean: implications for at-sea conservation," Endangered Species Research, 2014, p. 213.

131 Respondent's Counter Memorial, ¶¶ 323-324.

60. For the reasons given in Claimant's Memorial and supporting evidence, these figures were patently false.[132] Further, in expert evidence [redacted] in the ongoing TFJA proceedings, Mexico has abandoned its reliance on these density figures and confirmed that the density put forward by Odyssey is correct. The report takes the form of a series of answers to questions asked by the TFJA (and agreed upon by the parties). They include direct and specific questions on the correct density of *Caretta carreta* turtles in the Gulf of Ulloa.[133]

61. After answering a question requesting [redacted] to summarize the Peckham Study,[134] [redacted] was asked the following question: "[I]s the value of 1 to 85 turtles per km^2 in the [2018 Denial] valid to reflect the *Caretta caretta* turtle's population density in the Ulloa Bay?," to which [redacted] simply answered: "No. According to Seminoff 2014, the *Caretta caretta* turtle's population density in the Gulf of Ulloa is **0.577 to 0.747 turtles per km^2 with an average of 0.650 *Caretta caretta* turtles per km^2**."[135] These figures are in line with ExO's repeated attempts to advise SEMARNAT that their findings regarding *Caretta caretta* density had been erroneously inflated.[136]

62. This is a critical admission that the purported density of *Caretta caretta* used to justify both Denials was overstated by approximately 100 times. Based on the actual population density, and on the estimated Project dredging rate of 1 km^2 per year, the likelihood of encountering even one turtle during operations is remote.

63. Overall, Respondent's approach in its Counter-Memorial is to make sweeping, after-the-event statements about the alleged risk of adverse environmental impacts from the Project, unsupported by expert evidence and without even attempting to engage with the

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132 *See, e.g.,* Claimant's Memorial, ¶¶ 272-273, and Annex B to Claimant's Memorial, ¶¶ 11-12; S. Flores ER1, ¶¶ 22, 56-59, 109-113.

133 [redacted]

134 [redacted]

135 [redacted]

136 *See, e.g.,* **C-0019**, Amendment to the annulment petitions of the 2016 Denial, 6 June 2017, pp. 19-21; **C-0021**, Closing arguments for annulment petition of the 2016 Denial, 7 September 2017, pp. 9-12, 28, 32; **C-0151**, Technical and Scientific Report, 9 June 2016, pp. 15-26.

comprehensive set of expert reports and factual evidence Odyssey has contributed to the record.

4. Mexico Now Attacks the Project's Environmental Soundness by Relying on Technical Opinions and Submissions That Were Not Part of the Reasoning of the Denial and Which SEMARNAT's Scientists Concluded During Their Evaluation Had Been Addressed by ExO

64. Mexico provides no documentary evidence to support the integrity of SEMARNAT's evaluation and determination of the MIA. Nor has it produced any such evidence pursuant to document requests first made by Odyssey and then ordered by the Tribunal after Mexico refused to produce them voluntarily,[137] including no production in response to the following request:[138]

> All Documents, Communications, and drafts reflecting a determination by SEMARNAT/DGIRA ("Draft Determinations") and/or individual staff members regarding the environmental impact assessment of the Don Diego Project. This Request includes, but is not limited to, the Don Diego Project's alleged impact on *Caretta caretta* turtles, whales, and seabed recovery.

65. This means that Mexico claims—in its response to Claimant's production request—that it possesses no internal documents evidencing the allegedly "thorough" analysis described at paragraph 167 of its Counter-Memorial.[139] Nor, it claims, does it possess any documents generated in the analyses conducted on the MIA, the Additional Information, submissions from other government agencies or third parties, nor even any documents analyzing environmental impacts and mitigation measures.

66. Mexico has also failed to advance a single witness with first-hand knowledge to confirm the integrity of the MIA evaluation process. Mr. Pacchiano, the former Secretary of SEMARNAT, astoundingly claims that he had no involvement in the evaluation of the MIA 2015 and was told it would be denied only shortly before the decision was announced.[140] Mr. Bermúdez was involved only in preparing a submission to SEMARNAT on behalf of the

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137 *See* Procedural Order No. 3, 23 April 2021, PDF pp. 17-19.

138 Procedural Order No. 3, 23 April 2021, PDF p. 17 (Request 1, limited in time and custodians).

139 Respondent's Counter-Memorial, ¶ 167; *see also* ¶ 488, describing the DGIRA's analysis as "thorough."

140 Pacchiano WS, ¶¶ 41, 49.

National Commission of Protected Natural Areas (CONANP),[141] and Mr. Hernández does not suggest that he was involved at all in the evaluation of the Don Diego Project.[142]

67. To mask the absence of contemporaneous documentary and witness evidence about the evaluation of the Project, Respondent attempts to distract the Tribunal by citing opinions and submissions by various government agencies and third parties opposing the Project[143] without even acknowledging whether, much less explaining how, these submissions contributed to any denial decision. As explained below, Mexico has not sought to do so because the witness evidence and the Denials themselves show that these third-party opinions and submissions formed no part of the reasoning for the Denials, and SEMARNAT's officials concluded that the concerns raised in them had been addressed by ExO.

68. Odyssey does not dispute that SEMARNAT is entitled and encouraged to request third parties to provide information or opinions to assist with the evaluation of a MIA.[144] Any third party can make submissions under the public consultation process.[145] It is also agreed[146] that such submissions, and consultations more generally, assist SEMARNAT in reaching a decision, although they are not binding. [redacted].[147]

69. But third-party opinions and submissions are not determinative.[148] It necessarily lies with SEMARNAT to appropriately evaluate and determine the MIA itself based on the MIA, Additional Information, third-party and other opinions and submissions incorporated into the file, and its own expertise.[149] Indeed, SEMARNAT approved the MIAs of two of the

141 Bermúdez WS, ¶¶ 5, 18-25.
142 *See, e.g.,* Hernández WS, ¶ 4.
143 Respondent's Counter-Memorial, ¶¶ 270-305.
144 **C-0097**, R-LGEEPA-EIA, 31 October 2014, art. 24; Respondent's Counter-Memorial, ¶¶ 162, 271; Herrera ER2, ¶¶ 68-71.
145 Herrera ER2, ¶ 68.
146 Respondent's Counter-Memorial, ¶¶ 162, 271; Herrera ER2, ¶¶ 68, 70.
147 [redacted]
148 Herrera ER2, ¶ 70; [redacted]
149 Herrera ER2, ¶¶ 68-70; [redacted]

comparable dredging projects analyzed in Mr. Vladimir Pliego's First Expert Report despite both having received negative technical opinions from third parties, including CONABIO.[150]

70. Moreover, the third-party opinions and submissions were not the basis for either of the Denials.[151] [redacted][152]

71. This is also confirmed [redacted]"[153] [redacted]."[154] Additionally, [redacted].[155]

72. This is reflected in the 2018 Denial itself, which specifically notes that the concerns of the submissions now relied upon by Mexico were taken into account through the requests for and ExO's responses to Additional Information. These submissions include:

150 Pliego ER2, ¶¶ 149-152, 167; **C-0119**, Veracruz Resolution, 13 November 2013, pp. 101-102; **C-0130**, Resolución - Manifestación de Impacto Ambiental Modalidad Regional para el Puerto de Matamoros y su Área de Desarrollo en Matamoros, Tamaulipas, 3 September 2015 ("**Matamoros Resolution**"), pp. 125-127.

151 [redacted]

152 [redacted]

153 [redacted]

154 [redacted]

155 [redacted].

a. Submissions[156] on sea turtles and other issues by SEMARNAT's General Directorate of Environmental Policy and of Regional and Sectorial Integration, which SEMARNAT notes were based on draft legislation out for public consultation and addressed through the request for Additional Information;[157]

b. Submissions[158] on sea turtles and other issues by the Government of Baja California Sur, which SEMARNAT notes were based on draft legislation out for public consultation and addressed through the request for Additional Information;[159]

c. Submissions[160] by CIBNOR on various issues, represented by SEMARNAT to have generated its request to ExO for Additional Information, which SEMARNAT says clarified the matters raised;[161]

d. Submissions[162] by CONANP regarding turtles and whales, represented by SEMARNAT to have been taken into account through the request for Additional Information.[163] [redacted][164] and

e. Submissions[165] by CONABIO on whales and other issues, represented by SEMARNAT to have been considered in the Additional Information.[166]

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156 **R-0085**, Opinión técnica del 10 de octubre de 2014 de la Dirección General de Política Ambiental-SEMARNAT, referenced in Respondent's Counter-Memorial, ¶¶ 217-218.

157 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 173; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 171.

158 **R-0137**, Opinión técnica del Gobierno de Baja California Sur del 29 de septiembre de 2015, referenced in Respondent's Counter-Memorial, ¶ 301.

159 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 163; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 160.

160 **R-0089**, Opinión técnica del CIBNOR-IPN, 7 November 2014; **R-0090**, Segunda opinión técnica del CIBNOR-IPN, 6 May 2015; **R-0125**, Opinión técnica del 28 de septiembre de 2015 del CIBNOR; and **R-0126**, Opinión técnica del 6 de enero de 2016 del CIBNOR, referenced in Respondent's Counter-Memorial, ¶¶ 224-226, 286.

161 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, pp. 180-181; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 177-178.

162 **C-0006**, CONANP opinion forwarded to ExO, 27 November 2015, referenced in Respondent's Counter-Memorial, ¶¶ 273-278.

163 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 166; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 163.

164 [redacted]

165 **R-0129**, Opinión técnica del 17 de septiembre de 2015 de CONABIO, referenced in Respondent's Counter-Memorial, ¶ 291.

166 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 165; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 162-163.

73. The treatment of these third-party opinions and submissions in the Denials is therefore entirely consistent with the evidence of [redacted], and also entirely consistent with their evidence that [redacted].[167] It also demonstrates that the reasons given for the MIA Denials are illegitimate. Finally, [redacted].[168]

74. Mexico's Counter-Memorial also seeks to rely on third-party submissions that are not referenced in the 2016 and 2018 Denials at all, meaning that they formed no part of the formal evaluation of the MIA. That includes the 2014 submission[169] of SEMARNAT's Advisory Council for Sustainable Development,[170] which was actually submitted in the context of the 2014 MIA.

75. It is also noteworthy that Mexico now seeks to rely on submissions to SEMARNAT by foreign third parties,[171] in obvious contrast to SEMARNAT's unfair refusal to consider ExO's Technical and Scientific Report submitted in support of its petition to review the

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167 [redacted]

168 [redacted]

169 **R-0086** Opinión técnica del Consejo Consultivo del 3 de noviembre de 2014, referenced in Respondent's Counter-Memorial, ¶¶ 219-220, 292.

170 As well as the submissions by DGPAIRS (**R-0085**, Opinión Técnica de la Dirección General de Política Ambiental e Integración Regional y Sectorial, 10 October 2014, referenced in Respondent's Counter-Memorial, ¶¶ 217-218); PRIMMA-UABCS (**R-0088**, Opinión Técnica de la PRIMMA-UABCS, 4 November 2014, referenced in Respondent's Counter-Memorial, ¶¶ 221-223); CIBNOR-IPN (**R-0089**, Opinión Técnica del CIBNOR-IBN, 7 December 2014, and **R-0090**, Segunda opinión técnica del CIBNOR-IPN, 6 May 2015, referenced in Respondent's Counter-Memorial, ¶¶ 224-225); the government of Baja California Sur on 16 December 2014 (referenced in Respondent's Counter-Memorial, ¶ 226; Respondent identified the wrong exhibit); Island Seas (**R-0091,** Comunicación de Islands Seas, 2 March 2015, referenced in Respondent's Counter-Memorial, ¶¶ 227-228); Centro Mexicano para la Defensa del Medio Ambiente (**R-0092**, Opinión técnica del Centro Mexicano para la Defensa del Medio Ambiente, A.C., 8 January 2015, and **R-0124**, Observaciones a la MIA 2015 Centro Mexicano para la Defensa del Medio Ambiente, 11 April 2016, referenced in Respondent's Counter-Memorial, ¶¶ 229, 284); and la Sociedad de Historia Natural Niparajá (**R-0093**, Comunicación de Sociedad de Historia Natural Niparajá, A.C. dirigida a la DGIRA, 9 January 2015, referenced in Respondent's Counter-Memorial, ¶ 229).

171 Respondent's Counter-Memorial, ¶¶ 227, 280-282, 289, 302-305.

2016 Denial on the basis that it was allegedly "inadmissible" because its authors were not professionally registered in Mexico.[172]

76. Mexico's reliance in its Counter-Memorial on the third-party submissions should thus be seen for what it is—a *post hoc* attempt to justify the denials for reasons that SEMARNAT's scientists had concluded were satisfactorily addressed by ExO.[173] SEMARNAT's scientists and the Denials themselves confirm that the concerns raised in these third-party opinions had been addressed.

5. Additional Examples of How Respondent Seeks to Rely on New Reasons to Justify the Denials

77. Other examples of Mexico's attempts to distract the Tribunal with *post hoc* justifications for the MIA Denials not reflected in the contemporaneous documentary record of the DGIRA's analysis include a suggestion that Odyssey did not possess the expertise to implement the Project (purportedly increasing environmental risk),[174] the Project's alleged impact on whales,[175] and the possibility that the Project could have released toxic metals into the marine environment.[176] These arguments are further attempts to avoid addressing the unanswerable charge that the decisions taken to deny the MIA were not

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172 The chronology of the review is set out in Claimant's Memorial, ¶¶ 156-162, with the refusal to consider ExO's Technical and Scientific Report "because the authors were not professionally registered in Mexico" at ¶ 162.

173 Mexico's discussion of other complaints is similarly both irrelevant and misleading. In regard to the PROFEPA complaint, Mexico admits that PROFEPA investigated and concluded that the accusations against ExO were not true and ordered the case closed. (Respondent's Counter-Memorial, ¶ 232; **C-0360**, Letter from F. Manzanero to SEMARNAT re Conclusion of PROFEPA Investigation, 18 December 2015, p. 25.) With regards to the criminal complaint filed by ExO against certain parties in Baja California Sur (Respondent's Counter-Memorial, ¶ 106), the facts are that around May 2014, someone called Mr. Arturo González Ramírez approached ExO emphasizing the need for the Project to obtain a "social license," or local goodwill, and offered to help. ExO later discovered that Mr. González Ramírez was a fraudster and sought to cut all ties with him. Mr. González Ramírez reacted by saying he could sabotage ExO's application for a "social license," engaged in a series of actions to defame the Project, such as claiming that ExO was undertaking exploration activities without SEMARNAT's authorization, and then attempted to extort ExO, stating that he would stop these activities in return for payments. As a result, in November 2014, ExO made a criminal complaint against Mr. González Ramírez and others who had participated in his scheme. (Second Witness Statement of Dr. Claudio Lozano, dated 22 June 2021 ("**Lozano WS2**"), ¶¶ 12-16.)

174 *See, e.g.,* Respondent's Counter-Memorial, ¶¶ 74-75.

175 Respondent's Counter-Memorial, ¶¶ 88, 222, 226-228, 273-274, 278, 283-284, 289-290, 302-304, 526.

176 Respondent's Counter-Memorial, ¶¶ 220, 293, 367.

based on a fairly reasoned and proportional analysis of relevant environmental risks but rather on what result would best support Mr. Pacchiano's personal political prospects.

78. Again, as above, the evidentiary record demonstrates that none of the above-mentioned reasons actually formed any part of the justification set out either in the 2016 Denial or the 2018 Denial. These new explanations appear to be sourced from the third-party submissions which SEMARNAT itself said, in the Denials, had been answered through the requests for Additional Information, as noted above.[177]

79. Likewise, the suggestion that Odyssey does not have sufficient expertise to carry out the Project wholly ignores the caliber and environmental credentials of the team that Odyssey put together to plan and execute the Project, including, for example, Boskalis, one of the world's pre-eminent dredging and materials processing companies with many years of experience operating in Mexico and a focus on environmentally sustainable dredging (involved in the Project since 2013),[178] as well as experienced mining engineer and consultant Mr. Craig Bryson.[179] As described above, Dr. Newell and Dr. Clarke also have internationally-renowned expertise in environmental protection and mitigation measures, particularly with respect to dredging projects.[180] A significant number of other experts were retained by Odyssey, as explained in the Witness Statement of John Oppermann.[181]

80. Further, as noted above,[182] Deltares' unchallenged evidence is that the Project uses well-established technology with well-tested techniques to minimize environmental impact.

81. The Counter-Memorial contains repeated references to the Project's alleged potential impact on endangered whales, suggesting that the MIA had not adequately considered these issues. It says the Gulf of Ulloa is part of whale migratory routes,[183] that whales

177 *See supra*, ¶¶ 70, 71; [redacted]
178 Bryson WS1, ¶¶ 28, 32-39; Gordon WS1, ¶ 54.
179 Bryson WS1, ¶¶ 3-11.
180 *See supra*, ¶¶ 52 and 56.
181 Oppermann WS, ¶¶ 5, 28-36, 39-42, 46-51, 56-57, 63-82, 87-97, and Appendix 1.
182 *See supra*, ¶ 45.
183 Respondent's Counter-Memorial, ¶¶ 11, 88, 123-124.

may be affected by the noise of ExO's dredging operations,[184] and that areas known as "Bahía Magdalena" and the "entrance to Laguna San Ignacio to Boca de la Soledad" are breeding areas for gray whales.[185] It also put forward Mr. Bermúdez to opine that the Project would be carried out in the vicinity of the "El Vizcaíno" Biosphere Reserve, a protected natural area (which contains Laguna San Ignacio),[186] and cites third-party submissions about the Project's potential impact on whale migration and reproduction by CONANP[187] (Mexico's National Commission of Natural Protected Areas) and a number of other entities.[188]

82. However, as explained by Dr. Lozano,[189] [redacted],[190] SEMARNAT raised questions on these topics during the evaluation of the MIA, and in response, Odyssey provided further detailed Additional Information to SEMARNAT,[191] prepared with the assistance of third-party experts. Requests for additional information are typical during the evaluation of MIAs, contrary to Mexico's submission that they are unusual and reflect deficiencies in a MIA.[192]

83. As noted in Odyssey's Memorial and its Additional Information in response to SEMARNAT's requests:

a. The Project would not have taken place in or near "Bahia Magdalena," the "entrance to Laguna San Ignacio to Boca de la Soledad"(within El Vizcaíno), or the

184 Respondent's Counter-Memorial, ¶ 228.

185 Respondent's Counter-Memorial, ¶¶ 85, 222.

186 Bermúdez WS, ¶¶ 19, 22.

187 Respondent's Counter-Memorial, ¶¶ 273-278.

188 *See, e.g.,* Respondent's Counter-Memorial, ¶¶ 226, 301 (The Government of Baja California Sur); 221-223 (The Marine Mammal Research Program (PRIMMA) of the Autonomous University of Baja California Sur); 227-228 (a NGO called Island Seas); 283 (Greenpeace); 284 (the Mexican Center for Environmental Defense); 289 (the Society for Marine Mammalogy); 291 (CONABIO); and 302-304 (UNESCO World Heritage Center).

189 Lozano WS1, ¶¶ 33, 38, 45.3-45.4, 52, 54-55, 61.

190 [redacted]

191 **C-0005**, Additional Information, 3 December 2015, pp. 7-10, 24-27, 68-71, 186-197,253-260, 294, 297-298, 301-307.

192 Pliego ER2, ¶¶ 76-80; [redacted]

edge of "El Vizcaíno" (which are at least 100 km, 80 km, and 31 km from the closest dredging areas).[193]

b. The Project would have taken place at a significant distance from the coastal migration routes of gray whales and the oceanic migration routes of blue whales, which are far to the west, and would have had no impact on those migration routes.[194]

c. As part of its mitigation measures, ExO offered to suspend dredging during peak periods of whale migrations (after agreeing to release about 70% of the original Concession, which moved the Project site even farther away from the gray whale migration routes).[195]

d. Expert consultant HR Wallingford concluded that the noise levels that would have been generated during dredging would have been similar in intensity and magnitude to the whale-watching vessels that frequent the region, the merchant ships that cross trade routes, and fishermen's ships.[196] Furthermore, acoustic modelling confirmed that operations would generate no harmful frequencies or volumes in areas of whale migration[197] and would not reach coastal lagoons where gray whales give birth.[198]

e. ExO obtained a letter of support from whale-watching tour operators.[199]

84. The record demonstrates that Odyssey's answers satisfied SEMARNAT:

a. As noted above, [redacted][200]

193 Respondent's Counter-Memorial, ¶¶ 85, 222; **RN-0002**, Environmental Impact Assessment - Non-technical executive summary, June 2016, p. 23; Pliego ER1, ¶ 12. *See* Pliego ER2, Map 3, p. 48 for a map showing these distances.

194 *See* **RN-0002**, Environmental Impact Assessment - Non-technical executive summary, June 2016, p. 20, Fig. 17, referenced at Newell WS, ¶ 39.

195 Gordon WS1, ¶¶ 9, 37; Lozano WS1, ¶ 17; **C-0001**, Executive Summary, 21 August 2015, pp. 2-3; **C-0002**, MIA, 21 August 2015, pp. 11-13.

196 Claimant's Memorial, ¶ 101, referencing **C-0002**, MIA, 21 August 2015, pp. 117-118, 206-209, 507-513, 543, 669-673; **C-0002.12**, MIA, 21 August 2015, Annex 12, pp. 14-25; and **C-0002.13**, MIA, 21 August 2015, Annex 13; *see also* **C-0147**, Supporting letters sent by ExO to SEMARNAT, 6 April 2016.

197 **C-0002**, MIA, 21 August 2015, pp. 702-703; **C-0002.10**, MIA, 21 August 2015, Annex 10, pp. 112-117.

198 **C-0002**, MIA, 21 August 2015, pp. 702-703; **C-0002.10**, MIA, 21 August 2015, Annex 10, pp. 6, 44, 103, 136.

199 **C-0147**, Supporting letters sent by ExO to SEMARNAT, 6 April 2016.

200 [redacted]

b. Reflecting that conclusion, none of the concerns regarding whales identified in Mexico's Counter-Memorial or in Mr. Bermúdez's testimony were relied on by SEMARNAT in denying the Project.

c. Indeed, the 2016 Denial does not refer to any impacts on whales at all in the passages explaining why the MIA was refused. The 2018 Denial noted only that whales were located in the Gulf of Ulloa[201] and similarly did not identify any specific impact that the Project would have on them in the passages explaining why the MIA was being denied.

d. Both the 2016 and 2018 Denials record that the impact on whales had been addressed through the requests for Additional Information.[202] For example, as noted above,[203] that included CONANP's submissions regarding whale migration routes, the noise generated by the dredging operations, and the proximity of the Project to the protected breeding areas of whales—*i.e.*, all of the issues relied on in the Counter-Memorial.

85. Odyssey did not serve an expert report on the Project's effect on whales with its Memorial because impact on whales did not form any part of the 2016 and 2018 Denials.[204] However, in response to Mexico's submissions, Odyssey has obtained a further expert report addressing whales from Professor Flores-Ramírez,[205] which confirms the conclusions reached by Odyssey and its experts and reflected in ExO's MIA and Additional Information (and the conclusions of SEMARNAT's scientists). Particularly, as Mr. Flores-Ramírez has corroborated:

a. ExO provided sufficient information on the distribution and abundance of the large gray, blue, and humpback whales to assess the impact of the Project;[206]

b. Ecological niche models confirm that the spatial distribution of gray, blue, and humpback whales do not coincide with the Project area;[207]

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201 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 111-112.

202 **C-0008**, SEMARNAT Denial Decision, 7 April 2016, p. 166; **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 163.

203 *See supra*, ¶ 72(d)

204 The 2018 Denial refers to impact on sea turtles and other protected species of sea turtles (**C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 516-520) but does not give any reasons for denying the Project based on an impact on whales, with third-party submissions on whales said to have been answered by the Additional Information, as noted in paragraph 72(d) above.

205 S. Flores ER2, ¶¶ 12, 38-73.

206 S. Flores ER2, ¶¶ 12(b)-(e), 12(h), 43-47, 49, 50-51.

207 S. Flores ER2, ¶¶ 12(e)-(f), 52.

c. At its closest points, the PA is at significant distances from the breeding grounds of "Bahía Magdalena" (at least 100 km), the "entrance from Laguna San Ignacio to Boca de la Soledad" (at least 100 km), and Ojo de Liebre (at least 380 km), so it will not affect the whales in these places;[208]

d. The information in the MIA and Additional Information is sufficient to assess the impact of the sound of dredging. Noise would only marginally reach the coastal corridor of transit distribution of gray whales;[209] and

e. The suggestion that noise could affect the behavior and reproduction of gray whales is not plausible. The risk of noise affecting the coastal distribution habitat of gray and humpback whales is marginal, and it is very unlikely that the noise would cause hearing damage in gray whales and even less so in blue or humpback whales.[210]

86. As to the suggestion in the Counter-Memorial that the Project would release toxic metals, including uranium, into the ocean:

a. The MIA was not denied on this basis and it is simply not true.

b. This assertion again relies on the comparison of the Project with deep seabed mining. As noted above,[211] Deltares has explained why that comparison is invalid, and the Counter-Memorial does not engage with or challenge that evidence. Deltares concludes that "[s]ediments . . . [would have been] separated mechanically without any addition of acid or other chemicals. There is also no release of metals as the sediments are not metal rich."[212]

c. Studies by CalScience,[213] EA Engineering,[214] and HR Wallingford[215] appended to the MIA confirm that the dredging would not release toxic contaminants into the ecosystem and demonstrate that the dredging would not cause a breach of Mexico's water quality standard. Again, Mexico does not challenge this evidence.

d. The 2016 and 2018 Denials do not express any concern about the release of uranium. HR Wallingford notes that the relevant international convention states that, in naturally-occurring materials, radioactive materials are "*de minimis*," that movement of such materials is "***not regarded as of concern***," and, presumably

208 S. Flores ER2, ¶¶ 12(g), 48.
209 S. Flores ER2, ¶¶ 12(h), 60.
210 S. Flores ER2, ¶¶ 12(i), 60, 68-71.
211 *See supra*, ¶ 46.
212 Deltares ER1, Section 5.2, p. 38.
213 **C-0002.03**, MIA, 21 August 2015, Annex 3.
214 **C-0002.02**, MIA, 21 August 2015, Annex 2.
215 **C-0002.04**, MIA, 21 August 2015, Annex 4.

because of this, there is no Mexican or Californian standard to address uranium.[216] Once again, Mexico does not challenge this evidence.

87. Mexico's case to the contrary comprises bare assertions of environmental unsustainability, unsupported by independent expert evidence and uncorroborated by contemporaneous evidence or testimony of anyone involved in the scientific evaluation of ExO's MIA.

C. Secretary Pacchiano Had the Power to Cause the MIA to Be Denied, and He Exercised that Power Illegitimately

88. Despite Mexico's attempts to question their reliability,[217] [redacted].[218] That direct evidence about the determination of the MIA is corroborated by:

a. An email from Mr. De Narvaez to Mr. Longley on 22 March 2016, stating: ". . . in a recent meeting [Mauricio Limon] had in SEMARNAT the comment was made: 'Mr. Ancira's outbursts are going to cost him dearly.'"[219]

b. An email from Mr. De Narvaez to Mark Gordon and others on the Odyssey team on 10 August 2016, stating: ". . .the negative resolution for our MIA was of political nature and not technical, [redacted] The recent decision to deny consent came from Secretary Pacchiano due, it would appear, to a) his unstable political situation resulting from the approval of a controversial real estate project in Quintana Roo state and b) . . . 'Alonso's outbursts with Pacchiano' . . . The beauty of the annulment case . . . is that it would make life very easy for Pacchiano . . . it would have no political toll for him which was apparently his motivation in the refusal decision of consent. . . . It's clear to us that [redacted]

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216 **C-0002.04**, MIA, 21 August 2015, Annex 4, p. 37.

217 *See, e.g.,* Respondent's Counter-Memorial, ¶¶ 199-201, 208-210, 410-412, fns. 472-475.

218 Claimant's Memorial, ¶¶ 143-151.

219 **C-0405**, Email from D. De Narvaez to J. Longley re Richard, 22 March 2016.

[redacted] are not the force holding our project back, it's Secretary Pacchiano";[220]

c. Dr. Lozano's witness statement, which confirms that technical public servants and agencies (including CONANP [redacted]) had previously endorsed the Project;[221]

d. Dr. Lozano's testimony that [redacted];[222]

e. Mr. Pacchiano's video recorded public comments in Baja California Sur on 12 September 2018 (one month before the Second Denial) that the Project would be denied;[223]

f. The *La Crónica* and *Excélsior* articles confirming that they had received a "*tarjeta informativa*" from SEMARNAT determining that the Project would be denied again only two weeks after the TFJA's decision, and before the DGIRA's technical team had time to reevaluate the MIA in accordance with the guidelines set forth by the TFJA;[224]

g. An email from Mr. Stemm on 19 October 2015 to Mr. Ancira's personal assistant discussing the letters of support Odyssey asserts were requested by Mr. Pacchiano, in which Mr. Stemm states, "[t]he question I was trying to ask was whether Pacchiano . . . was still requiring the three letters from: - the Governor of the State of Baja Sur[;] - The Mayor of Comandu [sic] [and] - INAPESCA[.] You may recall that when Pacchiano asked us to withdraw the MIA in June, he told us we needed letters from those three people in order to approve the MIA";[225]

h. Contemporaneous initiatives by politicians asking Mr. Pacchiano to deny the Don Diego Project without scientific basis;[226] and

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220 **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2 (emphasis added).

221 Lozano WS1, ¶¶ 39, 62-64.

222 Lozano WS1, ¶ 70.

223 **C-0174**, Transcript of Pacchiano Public Statements, September 2018; **C-0176**, Los Cabos, September 2018.

224 **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018, p. 2; **C-0173**, A. Cruz, "Insistirá Semarnat en frenar proyecto minero submarino en BCS," Cronica Jalisco, 20 April 2018, p. 2.

225 **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015, p. 2.

226 **C-0440**, Proposición con Punto de Acuerdo por la que se Exhorta a la SEMARNAT a Negar Cualquier Autorización a los Proyectos Denominados Los Cardones y Don Diego en el Estado de Baja California Sur, Salón de Sesiones del Senado de la República, 6 September 2018; **C-0443**, Intervention of Sen. María Guadalupe Saldaña Cisneros, 6 December 2018; **C-0444**, Intervention of Sen. Jesús Lucía Trasviña Waldenrath, 6 December 2018; **C-0441**, Intervention of Sen. Víctor Manuel Castro Cosío, 6 September 2018.

i. The reasoning of both the 2016 and 2018 Denial decisions, neither of which is scientifically grounded (confirmed by the TFJA in relation to the 2016 Denial[227]).

89. In response, to support Secretary Pacchiano's assertion that he gave no such order, Mexico (and Secretary Pacchiano) (i) argue wrongly (and implausibly) that Secretary Pacchiano lacked the legal authority to decide or dictate the result in either Denial decision and (ii) deny that Secretary Pacchiano was politically motivated to deny the Project.[228] Both of these responses are unavailing.

1. Secretary Pacchiano Had the Power to Cause the MIA to be Denied

90. Mexico and Secretary Pacchiano's claim that Secretary Pacchiano lacked the authority to dictate the decision on the MIA is wrong as a matter of domestic law. As Mr. Herrera explains:

a. The Secretary[229] of SEMARNAT is the highest authority within that Secretariat[230] and is legally responsible for the resolution of matters[231] within the competence of SEMARNAT, including approval of environmental impact statements (MIAs)

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227 **C-0170**, TFJA Ruling, 21 March 2018, pp. 145-165.

228 SOLCARGO ER, ¶¶ 40(c), 80; Respondent's Counter-Memorial, ¶¶ 178-180. *See also* Respondent's Counter-Memorial, ¶ 352, where Mexico indicates that the Undersecretariat of Management for Environmental Protection was responsible for resolving ExO's review petition but did not do so within the timeframe contemplated by law.

229 The Organic Law of the Federal Public Administration ("**LOAPF**") establishes that the Executive Power can be exercised by various dependencies, including SEMARNAT, in the process of carrying out their administrative duties. (Herrera ER2, ¶ 15.) The same law also establishes that, among others, the Secretariats of State are considered part of the Centralized Public Administration, and as such, they assist in carrying out the administrative duties for which the Executive Power is responsible. (Herrera ER2, ¶ 16.) Moreover, the LOAPF provides that a Secretary of State shall be at the helm of each Secretariat, assisted by Undersecretaries and Directors as per the terms established by the respective interior regulations. Here, these are the Interior Regulations of the Secretariat of the Environment and Natural Resources, RI-SEMARNAT. (Herrera ER2, ¶ 17.)

230 Herrera ER2, ¶ 21.

231 RI-SEMARNAT vests with the Secretary, and no one else, the responsibility for resolving matters before SEMARNAT. Article 4 of RI-SEMARNAT reads: "**[t]he representation, processing and resolution of the matters relevant to the Secretariat originally corresponds to the Secretary**, who, for the better distribution and development of the work, shall be able to confer his delegable faculties to subordinate public servants, **without prejudice to their direct exercise**, for which he shall issue the related agreements that shall be published in the Official Diary of the Federation." **HH-0001**, Reglamento Interior de la Secretaría de Medio Ambiente y Recursos Naturales, publicada en el Diario Oficial de la Federación, 26 November 2012 ("**RI-SEMARNAT**"), art. 4 (free translation; emphasis added). In its original Spanish, that regulation reads: "**[c]orresponde originalmente al Secretario, la representación, trámite y resolución de los asuntos de la competencia de la Secretaría**, quien podrá, para la mejor distribución y desarrollo del trabajo, conferir sus facultades delegables a servidores públicos subalternos, **sin perjuicio de su ejercicio directo**, para lo cual expedirá los acuerdos relativos que se publicarán en el Diario Oficial de la Federación." (emphasis added).

evaluated under the environmental impact assessment procedure (PEIA). This is a responsibility that the Secretary cannot wash his hands of or disconnect from.[232]

b. The Secretary must be assisted by the Undersecretary of Environmental Protection Management and the General Director of the DGIRA, among other officials,[233] and can delegate some powers to these subordinate public servants, including approval of MIAs. This is without prejudice to the Secretary's right to directly exercise those powers.

c. However, the Secretary remains responsible for all matters undertaken by SEMARNAT,[234] regardless of how the work is delegated or distributed, which implies the need for supervision of and communication with the Undersecretaries and Directors, and participation in their work.

d. Critically, the DGIRA (which Mexico says was responsible for the Denial of the MIA)[235] is not an independent authority, but instead is an administrative unit of SEMARNAT, with its powers vested in the Secretary and Undersecretary.[236] As such, the Director General and others within the DGIRA are subordinates of that Undersecretariat and must follow instructions given by the Secretary or Undersecretary.[237]

e. The General Director of the DGIRA is required by law to coordinate with his immediate superior on the resolution of matters within the DGIRA's competence, such as the evaluation and determination of MIAs.[238] The General Director and other employees of the DGIRA report to the Undersecretary of Environmental Protection Management and the Secretary of SEMARNAT and must follow their instructions.[239]

f. As a matter of law (and practice), the DGIRA should therefore keep the Secretary and Undersecretary informed about the evaluation of any significant MIA.[240]

g. SEMARNAT's Secretary and Undersecretary have the power to confirm, modify, or revoke MIA authorizations in connection to administrative appeals processes ("recursos de revisión") that they are bound to resolve.[241] For instance, if

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232 Herrera ER2, ¶¶ 24, 29.
233 Herrera ER2, ¶¶ 17, 20.
234 Herrera ER2, ¶¶ 17, 21, 23-24.
235 Respondent's Counter-Memorial, ¶¶ 176-180.
236 Herrera ER2, ¶ 36.
237 Herrera ER2, ¶¶ 38-39.
238 Herrera ER2, ¶¶ 37-39.
239 Herrera ER2, ¶¶ 30-39.
240 Herrera ER2, ¶ 39.
241 Herrera ER2, ¶¶ 28(f), 42, 43(e); *see also* **C-0014**, LGEEPA, 5 June 2018, arts. 176, 179; **FKB-0008**, Ley Federal de Procedimiento Administrativo, 18 May 2018, arts. 86, 91(IV), 92.

Undersecretary Garciarivas would have granted ExO's review petition, it could have formally approved ExO's MIA.[242]

91. Thus, Mr. Pacchiano's claim that he only learned about the Denial just before it was issued[243] is not credible. It also conflicts with [redacted].[245] [redacted] even though it was ordered by the Tribunal to do so.[246]

92. In addition, the practical reality is obvious. The Secretary of SEMARNAT is appointed by the President, and that brings natural authority. Further, Mr. Pacchiano acknowledges that he had the power to fire [redacted].[247] Civil servants who can be dismissed at the behest of a political appointee of a President typically follow the instructions they are given. Mr. Pacchiano himself publicly declared in office that he would deny or would have denied certain MIAs.[248] There can be no serious dispute that if the Secretary had ordered the MIA to be denied, his orders would have been followed.

242 Herrera ER2, ¶ 42.

243 Pacchiano WS, ¶ 41.

244 [redacted]

245 [redacted]

246 *See* Procedural Order No. 3, 23 April 2021, PDF p. 29.

247 Pacchiano WS, ¶¶ 18-20.

248 For example, as he was facing criticism over his handling of controversy stemming from SEMARNAT's approval of a controversial project located in Tajamar, Pacchiano declared: "We did not approve it, and moreover, we would have never approved a project with those characteristics." **C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016, p. 3 (free translation).

2. Ordering the Denial of the Project Served Mr. Pacchiano's Political Interests

93. [redacted] Mr. Pacchiano gave a direct order to deny the 2016 MIA following a meeting at which Secretary Pacchiano claimed to have been "insulted" by a representative of ExO,[249] which Mr. Pacchiano states never occurred.[250]

94. [redacted] Mr. Pacchiano was worried about his political career as a Green Ecologist Party politician (Partido Verde Ecologista de México, or "**PVEM**"), believing he needed to prevent himself from being publicly associated with a so-called mining project.[251]

95. In response, Mr. Pacchiano insists that "[i]t is false that my work at SEMARNAT was affected by alleged political aspirations,"[252] adding that he "never had, nor [has] political aspirations to get a popular representation office, nor of any other nature."[253] But Mr. Pacchiano misses the point; political aspiration is not limited to seeking elected office.[254] It also includes survival as a political appointee in a presidential administration.

96. As Undersecretary, Mr. Pacchiano had borne the brunt of significant public criticism levied against the Peña Nieto administration for its perceived handling of a variety of high-profile environmental matters. This criticism placed his tenure in jeopardy and included:

    a. In 2013, SEMARNAT was heavily criticized by a decision to remove the protected status of Parque Nacional del Nevado de Toluca, including the legalization of five illegal mines operating in the area.[255] In 2016, significant public criticism reemerged following SEMARNAT's approval of commercial felling of trees in an area covering 32.59% of the previously protected area.[256]

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249 [redacted]; *see also* **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2; **C-0405**, Email from D. De Narvaez to J. Longley re Richard, 22 March 2016.

250 Pacchiano WS, ¶ 60.

251 [redacted]; *see also* **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2 (discussing Mr. Pacchiano's political motives).

252 Pacchiano WS, Section B.1.

253 Pacchiano WS, ¶ 10.

254 Pacchiano WS, ¶¶ 9-10.

255 **C-0371**, P. Martínez, "Se tolerará la minería dentro del Nevado de Toluca," Vanguardia MX, 20 November 2013.

256 **C-0419**, R. Vergara, "La cara oscura del Nevado de Toluca," Proceso, 8 December 2016, p. 3.

b. In 2014, copper mining company Buenavista del Cobre spilled 40 million liters of copper sulfate and other toxic metals into the Sonora River in what became known as one of the "worst environmental disasters in Mexican mining history."[257] In 2017, Mr. Pacchiano controversially authorized the closure of the program designed to compensate those who suffered due to the toxic spill.[258] At the time, as little as 10% of the designated compensation funds had been distributed to spill victims.[259] The Peña Nieto Administration was heavily criticized for not delivering on its compensation promises,[260] with allegations of public corruption gaining political traction at the national level.[261]

c. Also in 2014, Peña Nieto's administration, and Mr. Pacchiano in particular, became the subject of significant media criticism for their handling of the vaquita marina crisis, in which poachers were estimated to have killed 90% of the population between 2011 and 2017.[262]

d. As Mr. Pacchiano has admitted,[263] SEMARNAT also faced strong public backlash[264] over its 2014 approval of a project for an open pit gold mine known as Los Cardones—in the Sierra de la Laguna biosphere reserve, located within Baja California Sur.[265] Local opposition was so strong that it led to road and airport blockages in the area.[266] Environmentalists even marched to Baja California Sur's gubernatorial palace and blockaded SEMARNAT's local offices.[267] This scandal was publicly associated with Mr. Pacchiano. As one newspaper reported, "Rafael Pacchiano, responsible for authorizations from [SEMARNAT], approved controversial projects like Los Cardones, within areas of the Sierra de la Laguna biosphere reserve. . . . In January 2014, the public servant [Pacchiano] declared that mining 'has been demonized'. Months later, in July, he gave green light to the MIA of Los Cardones, in the municipality of La Paz, where exploitation via open

257 **C-0437**, A. Villalobos, "Sonora: cuatro años de maldición minera," Proceso, 6 August 2018 (free translation).

258 **C-0436**, REMAMX.org, "Hacen negocio con fondo para remediar ecocidio en Sonora," Observatorio de Conflictos Mineros de América Latina (OCMAL), 1 August 2018, p. 2.

259 **C-0436**, REMAMX.org, "Hacen negocio con fondo para remediar ecocidio en Sonora," Observatorio de Conflictos Mineros de América Latina (OCMAL), 1 August 2018, p. 2.

260 **C-0437**, A. Villalobos, "Sonora: cuatro años de maldición minera," Proceso, 6 August 2018, p. 2.

261 **C-0460**, J. Del Real, "Corrupción tras el derrame en Río Sonora," ExpokNews, 16 August 2018, pp. 2-4.

262 Claimant's Memorial, ¶ 113; **C-0380**, CEMDA Press Report, "Peña Nieto, ¡Muévete por la vaquita marina!," CEMDA, 18 September 2014; **C-0159**, E. Malkin, "Before Vaquitas Vanish, a Desperate Bid to Save Them," The New York Times, 27 February 2017, pp. 2, 7.

263 Pacchiano WS, ¶ 45.

264 [redacted]

265 **C-0388**, R. León, "Reitera el gobierno de Baja California Sur rechazo al proyecto minero Los Cardones," La Jornada, 28 September 2015, p. 1.

266 **C-0388**, R. León, "Reitera el gobierno de Baja California Sur rechazo al proyecto minero Los Cardones," La Jornada, 28 September 2015.

267 **C-0376**, "Ambientalistas de BCS protestan contra proyecto minero Los Cardones," Observatorio de Conflictos Mineros de América Latina (OCMAL), 12 May 2014, p. 1.

pit mining is contemplated."[268] Mr. Pacchiano evidently made this admission in an attempt to "blame" [redacted] for the decision,[269] but in so doing, he actually makes Odyssey's point: "once bitten, twice shy." This experience demonstrates just how sensitive Mr. Pacchiano must have been to the career-threatening ramifications of being caught in the middle of an environmental issue as it escalates into a perceived scandal.

97. This was the context in which Secretary Pacchiano was faced with the decision of whether to approve the MIA. He must have quickly recognized the familiar pattern emerging when the Project began to attract public criticism from environmentalists and fishermen. This included the now-familiar concerns that the Project could harm whales and loggerhead turtles.[270] For their part, fishermen argued that the sediment plumes generated by the Project's dredging activity would decrease fish productivity in the area.[271] Some fishermen also opposed all mining projects in Baja California Sur on principle.[272]

98. Although the Don Diego Project is a dredging project, in 2014, the local press branded the Project a "marine mine," inaccurately reporting unfounded fears as fact that it would generate "toxic concentrations of heavy metals."[273]

99. Given the public concerns raised by environmentalists and fishermen, and in the context of significant criticism of his agency's other decisions, Mr. Pacchiano showed himself resistant to approving the Project as Undersecretary, expressly raising whales and turtles

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268 **C-0386**, A. Enciso, "Revisará Semarnat MIA de minera Don Diego en Baja California Sur," La Jornada, 31 August 2015, pp. 1-2 (free translation; emphasis added). The original Spanish reads: "Rafael Pacchiano, responsable de las autorizaciones de [SEMARNAT], aprobó proyectos controversiales como el de Los Cardones, en áreas de la reserva de la biosfera Sierra la Laguna. . . . En enero de 2014 el funcionario [Pacchiano] declaró que la minería 'ha sido satanizada'. Meses más tarde, en julio, dio luz verde a la MIA de Los Cardones, en el municipio La Paz, donde se prevé una explotación de tajo a cielo abierto."

269 Pacchiano WS, ¶ 45.

270 **C-0381**, "Minera marina en Comondú elevaría concentraciones tóxicas del lecho oceánico," BCS Noticias, 5 November 2014, pp. 1-2 (emphasis added); *see also* **C-0391**, Asociación Interamericana para la Defensa del Ambiente, "Mina Don Diego: experimentando con el patrimonio natural de México," Animal Político, 8 December 2015, pp. 3-6.

271 **C-0381**, "Minera marina en Comondú elevaría concentraciones tóxicas del lecho oceánico," BCS Noticias, 5 November 2014, pp. 1-2.

272 **C-0461**, SPDNoticias.com, "En BCS pescadores protestan contra minera submarina," Observatorio de Conflictos Mineros de América Latina (OCMAL), 13 April 2018, p. 1.

273 **C-0381**, "Minera marina en Comondú elevaría concentraciones tóxicas del lecho oceánico," BCS Noticias, 5 November 2014, p. 2 (free translation).

as political (rather than scientific) issues about which he was concerned at a 2014 meeting with ExO representatives.[274]

100. That Mr. Pacchiano was sensitive to potential political opposition to the Project is evidenced by his asking Odyssey to produce letters of support from CONAPESCA, the government of Baja California Sur, and representatives from local fisheries.[275] Of course, as recognized by Mr. Herrera, submitting letters of support as a prerequisite to approving a Project does not form any part of the legal requirements for a MIA authorization.[276]

101. In his witness statement, Mr. Pacchiano denies that he ever requested these letters of support,[277] and Respondent dismisses Dr. Lozano's witness statement as "hearsay."[278] However, the contemporaneous evidence supports Dr. Lozano's testimony. Specifically, in an email exchange between Mr. Ancira, Mr. Ancira's personal assistant, and Gregory Stemm, the latter asked:[279]

> The question I was trying to ask was whether Pacchiano from SEMARNAT was still requiring the three letters from:
>
> - The Governor of the State of Baja Sur
> - The Mayor of Comandu [sic]
> - INAPESCA
>
> You may recall that when Pacchiano asked us to withdraw the MIA in June, he told us we needed letters from those three people in order to approve the MIA.
>
> My question is whether we still need the letters, and if so, whether there is anything we should be doing on the Odyssey side to help get them?

102. In addition, [redacted][280]

274 Claimant's Memorial, ¶ 118; Lozano WS1, ¶ 29.
275 Lozano WS1, ¶¶ 41-42.
276 Herrera ER1, ¶ 59.
277 Pacchiano WS, ¶ 64.
278 Respondent's Counter-Memorial, ¶ 494.
279 **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015, p. 2.
280 [redacted]

103. After Mr. Pacchiano was named Secretary of SEMARNAT in August 2015,[281] the agency he now led continued to be dogged by environmental scandals, including the worsening vaquita marina crisis.[282] The political impact was far-reaching, with President Peña Nieto himself traveling to Baja California Sur in April 2015 to address the crisis, promising to provide resources to address the illegal fishing activities contributing to the vaquita's endangerment.[283] Although he promised to increase federal patrols to address illegal fishing activities, Mr. Pacchiano was singled out in relation to this controversy for refusing to implement a permanent gillnet ban in line with the main recommendations of conservationists.[284]

281 **C-0167**, A. Ortega Rubio, "Mexican Natural Resources Management and Biodiversity Conservation," Chapter 3 (2018), pp. 83-85; **C-0132**, "Nombran a Rafael Pacchiano Alamán secretario de Semarnat," El Imparcial, 27 August 2015.

282 **C-0387**, C. Moreno, "La vaquita marina sigue en peligro," Periodistas en Español, 23 September 2015.

283 **C-0387**, C. Moreno, "La vaquita marina sigue en peligro," Periodistas en Español, 23 September 2015, p. 3. While Peña Nieto promised citizens that his administration was developing a country-wide support system to address the vaquita crisis—including new technology, 30 ocean patrols, 19 coastal patrols, and 71 interceptor patrols—the administration later reneged, saying they did not have the resources to do so.

284 **C-0159**, E. Malkin, "Before Vaquitas Vanish, a Desperate Bid to Save Them," The New York Times, 27 February 2017, p. 7.

104. That the vaquita risked becoming extinct under the watch of Mr. Pacchiano, a member of the PVEM,[285] did not go unnoticed. Indeed, as one news article remarked, "[t]he period in which the vaquita marina has suffered its strongest decline coincides with the arrival of . . . the [PVEM] to SEMARNAT."[286]

105. In parallel, the United States government announced in August 2015 that it was considering imposing an embargo of Mexican fisheries products as a result of turtle deaths from fisheries bycatch.[287]

106. Not long thereafter, in early 2016, Mexico City reached air quality levels so low that pollution containment measures had to be activated for the first time in 11 years, leading to further criticism of the government.[288] Mr. Pacchiano was again singled out for criticism here, too, with one editorialist stating that he had "clearly insufficient credentials to take control of environmental policies in a country that contaminates everything."[289]

107. Also in the first quarter of 2016, Mr. Pacchiano became "the controversial figure" behind the Tajamar real-estate wetlands controversy, in the Mexican state of Quintana Roo, where environmentalist groups criticized SEMARNAT for not invalidating the authorization to raze 50 hectares of wetland.[290] Secretary Pacchiano tried to distance himself from this project, which was approved in 2005, saying: "we would not authorize it, indeed, a project with these characteristics, we never would have authorized it."[291]

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285 **C-0167**, A. Ortega Rubio, "Mexican Natural Resources Management and Biodiversity Conservation," Chapter 3 (2018), p. 83; **C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016, pp. 2-3.

286 **C-0421**, I. Lira, "La agonía de la vaquita marina se aceleró con el PVEM en Semarnat, acusan Greenpeace y especialista," SinEmbargo, 21 March 2017, p. 1 (free translation).

287 **C-0129**, E. Godoy, "México, en riesgo de un embargo pesquero por tortugas caguama," Proceso.com, 14 August 2015; *see also* Claimant's Memorial, ¶ 136.

288 **C-0403**, Associated Press, "Ciudad de México suma cuatro días en alerta por contaminación," The New York Times, 17 March 2016.

289 **C-0415**, C. Requena, "Contaminación política," El Economista, 17 April 2016, p. 1 (free translation).

290 **C-0397**, "Rafael Pacchiano, el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016, p. 1; *see also* **C-0398**, A. Aguirre, "¿Ecocidio en Tajamar?," El Economista, 27 January 2016.

291 **C-0399**, M. Ureste, "Las 10 claves que debes saber sobre el conflicto ecológico por el Manglar Tajamar," Animal Político, 29 January 2016, p. 6; **C-0396**, "Nunca hubiera autorizado un proyecto como el Malecón Tajamar, dice el titular de la Semarnat," Animal Político, 26 January 2016, p. 1; **C-0397**, "Rafael Pacchiano,

108. Given these political headwinds, it is easy to see why Mr. Pacchiano, the politically appointed head of SEMARNAT, would have found it expedient to overrule the scientific staff and order them to "find a reason"[292] to deny the MIA. DGIRA employees were thus forced to resort to inventing a justification in the form of an unacceptable risk to *Caretta caretta* turtles.[293] But, [redacted] as well as by the available scientific evidence, this was not a valid technical reason to deny the Project.

109. After the 2016 Denial, ExO filed a review petition before SEMARNAT for the agency to reconsider the decision.[294] As this petition went nowhere with SEMARNAT, ExO was forced to appeal to the TFJA.[295] After the TFJA annulled SEMARNAT's initial decision and turned it back to SEMARNAT, Mr. Pacchiano evidently continued to believe that, politically speaking, he had more to lose than to gain from approving the Project. In addition to the controversies described above, Secretary Pacchiano was then leading talks with fishermen from Baja California Sur, Sonora, and Sinaloa, who were protesting the creation of a protected refuge in the Gulf of California that would curtail fishing activity.[296] With the conflict branded as a battle between "[f]ishermen against environmentalists,"[297] the last thing he would have wanted to do was antagonize either of the parties further, and here he was faced with approving a dredging project publicly opposed by both.

110. What is more, the teporingo, a rabbit endemic to Mexico, was reported by some newspapers to have become extinct under Mr. Pacchiano's watch in September 2018.[298] The Peña Nieto administration, and SEMARNAT in particular, was accused of not having done enough to save the teporingo, which had been endangered for some years, with

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el 'sexy' y polémico funcionario cuestionado por la destrucción del manglar en Cancún," Yahoo! News, 27 January 2016, p. 3.

292 [redacted]

293 [redacted]

294 Claimant's Memorial, ¶¶ 156-159.

295 Claimant's Memorial, ¶¶ 160-163.

296 **C-0439**, A. Olazábal, "Confirma Gobernador reunión entre pescadores y Secretario de Medio Ambiente y Recursos Naturales," Noroeste, 15 August 2018.

297 **C-0431**, H. Takahashi, "El espectador – El Santana del mar," El Sol de México, 23 July 2018, p. 1 (free translation).

298 **C-0442**, "El teporingo, especie endémica de México, se ha extinguido, informa la UAEM; se adelantó a la vaquita," SinEmbargo, 28 September 2018.

environmentalists again calling out Mr. Pacchiano personally, complaining that his tenure at SEMARNAT had been "a dark night for the environment in Mexico."[299]

111. At the same time, Mr. Pacchiano's wife, Alejandra Lagunes, was running for the Senate on the pro-environment PVEM platform (a seat which she eventually won).[300] The risks that approval of the Don Diego Project could have caused her candidacy would have been obvious, particularly given that she and Mr. Pacchiano were a very well-known political couple.[301]

112. Secretary Pacchiano also faced political pressure from the legislative branch when, in September 2018—just before the teporingo's extinction was publicly reported—Senator Victor Manuel Castro Cosío introduced a point of agreement to request that SEMARNAT deny permits for Don Diego and another project.[302] Senators María Guadalupe Saldaña Cisneros,[303] Jesús Lucía Trasviña Waldenrath,[304] and Castro Cosío[305] all exhorted SEMARNAT to deny the Project.

113. Faced with a plethora of political landmines, Mr. Pacchiano was apparently so determined to burnish his environmental credentials with the public that he was willing to violate Mexican law by publicly announcing that the Don Diego Project would be again denied *in advance of the actual decision*,[306] stating:[307]

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299 **C-0442**, "El teporingo, especie endémica de México, se ha extinguido, informa la UAEM; se adelantó a la vaquita," SinEmbargo, 28 September 2018, p. 6.

300 **C-0429**, Huffington Post México, "Estos son los 32 políticos que llegarán como 'pluris' al Senado," Excélsior, 7 July 2018, p. 4.

301 **C-0395**, S. Rosagel, "Rafael Pacchiano: de 'Juanito' a titular de la Semarnat," SinEmbargo, 25 January 2016.

302 **C-0440**, Proposición con Punto de Acuerdo por la que se Exhorta a la SEMARNAT a Negar Cualquier Autorización a los Proyectos Denominados Los Cardones y Don Diego en el Estado de Baja California Sur, Salón de Sesiones del Senado de la República, 6 September 2018.

303 **C-0443**, Intervention of Sen. María Guadalupe Saldaña Cisneros, 6 December 2018.

304 **C-0444**, Intervention of Sen. Jesús Lucía Trasviña Waldenrath, 6 December 2018.

305 **C-0441**, Intervention of Sen. Víctor Manuel Castro Cosío, 6 September 2018.

306 Claimant's Memorial, ¶¶ 167-168, 171-172; Herrera ER1, ¶¶ 89-91. This does not square with Pacchiano's assertion that, while he was Undersecretary and later Secretary, he "always conduct[ed] [himself] according to the law and in strict observance of the regulations that govern the actions of public officials." Pacchiano WS, ¶ 8.

307 **C-0174**, Transcript of Pacchiano Public Statements, September 2018 (emphasis added); **C-0176**, Los Cabos, September 2018.

> Regarding the status of the mining of Don Diego, they [ExO] filed an environmental impact a while ago, this was refused and they requested a revision of this decision before a tribunal. A judge determined that the Secretary should reissue a new resolution and **it is being drafted in the same sense as the original one, that is to deny it**.

114. Mr. Pacchiano claims this statement was taken out of context,[308] but the meaning is plain: he wanted it to be publicly known that he would not allow SEMARNAT to approve the Project.

115. Beyond his own public affirmations, Secretary Pacchiano also ordered SEMARNAT to inform the media that the Project would be denied. Indeed, both the *La Crónica de Jalisco* article and the *Excélsior* article refer to a "*tarjeta informativa*" sent to the news outlets by SEMARNAT. The "*tarjeta informativa*" stated that "Semarnat will comply with the tribunal's order with the conviction that said project represents a threat to the integrity of the ecosystem, and therefore it will reinforce the technical and scientific grounds to confirm the original resolution, in other words, to deny the authorization."[309]

116. Mr. Pacchiano now questions the reliability of these articles, notwithstanding the fact that they corroborate each other on a contemporaneous basis. This is why Odyssey requested the production of those *tarjetas informativas*, which the Tribunal duly granted.[310] However, Respondent has failed to produce those documents, saying that "[t]he documents . . . were sought exhaustively within SEMARNAT, particularly in the DGIRA. However, there were no documents."[311]

117. Secretary Pacchiano further directed SEMARNAT to publicize the Second Denial of the Don Diego Project and promoted the story on his own and SEMARNAT's Twitter accounts.[312] Mr. Pacchiano now claims that "it was common for me to share or '*retweet*'

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308 Pacchiano WS, ¶ 75.

309 **C-0171**, E. Méndez, "Negarán dragado de arena en Ulloa; resolución de la Semarnat," Excelsior, 19 April 2018, p. 2 (free translation); **C-0173**, A. Cruz, "Insistirá Semarnat en frenar proyecto minero submarino en BCS," Cronica Jalisco, 20 April 2018, p. 2 (free translation).

310 *See* Procedural Order No. 3, 23 April 2021, PDF p. 35.

311 Letter from Mexico to Cooley Transmitting Document Production, 18 May 2021, p. 3 (free translation).

312 Claimant's Memorial, ¶¶ 167-168, 171-172, 177-178.

publications from SEMARNAT."[313] Yet he fails to disclose that he had never before re-tweeted any other MIA approval or denial in the past. This public-facing activity, of course, had the clear purpose of capitalizing on the political gain that he must have expected from being personally associated with the Denial, particularly in light of the overwhelming environmental controversies personally attributed to him.

118. As noted above,[314] Respondent has produced no documentary evidence to support its contention that SEMARNAT's Denial of the MIA was driven by anything else but Mr. Pacchiano's personal, political motivations. Its only evidence is the self-serving statement of Mr. Pacchiano himself, which is demonstrably false in key respects.

a. For example, Mr. Pacchiano suggests that he first became acquainted with the Don Diego Project in August 2014.[315] However, contemporaneous documentary evidence confirms that Mr. Pacchiano was personally actively engaged in organizing meetings and making introductions in connection with the Don Diego project several months earlier. An email Mr. De Narvaez sent to Mr. Pacchiano on 29 May 2014 states:[316]

> Esteemed Undersecretary Pacchiano:
>
> I write to update you in our progress with CEMDA, after the **very positive meeting we had in your office *last Monday***. **Many thanks for your important intervention in organizing that meeting** and for your cooperation and kindness in introducing us to Lic. Alanis.
>
> . . .
>
> Likewise this exercise could reduce by some proportion the media battles that all these projects entail by their nature, by being able to explain the realities of the project and its limited impact on the regional ecosystems.
>
> Abusing your kindness, I wanted to ask if in your opinion, after this meeting with CEMDA and incorporating their comments and

313 Pacchiano WS, ¶ 76.

314 *See supra*, ¶ 64.

315 Pacchinao WS, ¶¶ 54-57.

316 **C-0377**, Email from D. De Narvaez to R. Pacchiano, C. Curi re Reunion con CEMDA, 29 May 2014, pp. 1-2 (free translation; emphasis added).

> recommendations, could we think about submitting the MIA already?
>
> . . .
>
> We await your comments and again I wanted to thank your very good management in organizing this coming together which has allowed us to demonstrate the truths and benefits of our project.

b. Mr. Pacchiano further claims he never requested that ExO withdraw and re-submit its MIA with letters of support during his 18 June 2015 meeting with Mr. Ancira.[317] This is contradicted by email between Mr. Stemm and Mr. Ancira's private secretary, Rocio Jaime Barrera, in which Mr. Stemm recalls that Mr. Pacchiano had requested that Mr. Ancira withdraw the 2014 MIA and resubmit it alongside letters of support from Baja California Sur, the mayor of Comondú, and INAPESCA.[318]

119. Finally, Mr. Pacchiano asserts, [redacted]"[319] This statement is gravely misleading because, with it, Mr. Pacchiano fails to mention that [redacted].[321] Consistent with its approach throughout the Counter-Memorial, Mexico uses this demonstrably false claim by Mr. Pacchiano to distract from the testimony that demonstrates his true motivation for substituting the opinion of SEMARNAT's scientific experts with his own.

D. Mexico's Own TFJA Confirmed SEMARNAT's Denial of Due Process

120. In response to Odyssey's evidence of SEMARNAT's rebuke by the TFJA, Mexico erects a strawman argument, suggesting that Odyssey is arguing that the TFJA ordered SEMARNAT

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317 Pacchiano WS, ¶ 64.

318 **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015, pp. 1-2. Moreover, Secretary Pacchiano met with ExO yet again on 31 January 2017. This was after the COP13 conference and, consequently, after a period of heightened media scrutiny regarding the environment. During that meeting, he expressed that he would prefer to resolve ExO's MIA through a review petition rather than a proceeding before the TFJA. (Lozano WS2, ¶¶ 26-27; *see also* **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2.)

319 Pacchiano WS, ¶ 8, fn. 1.

320 **C-0334**, TFJA's Decision, 23 November 2018, p. 16.

321 *See infra* Section III.B.

to approve the MIA.[322] Odyssey never argued that. Odyssey correctly summarized the TFJA's ruling as follows: "[t]he TFJA ruled, in conclusion, that SEMARNAT should re-analyze the entirety of ExO's MIA and provide a scientifically-grounded and properly reasoned decision within four months."[323]

121. In doing so, the TFJA also admonished SEMARNAT for its manifestly unfair treatment of ExO during the review petition process. As previously explained, SEMARNAT refused to consider the Technical and Scientific Report attached to ExO's Review Petition on the grounds that there were discrepancies with the identities and number of people who intervened in its elaboration.[324] SEMARNAT also discarded ExO's expert report on marine biology because it was elaborated by foreign experts.[325] With respect to both, the TFJA explained that "**such conduct by the respondent authority constitutes an arbitrary action violating the norms of due process,** to [ExO's] prejudice."[326] The reasons given by SEMARNAT for dismissing both were so contrived that the TFJA addressed each briefly but decisively:

a. SEMARNAT disregarded the Technical and Scientific Report allegedly because John Opperman's name did not match that on his passport and because there was a discrepancy with the number of authors.[327] The TFJA dismissed both reasons,[328] noting that Mr. Opperman's passport signature was identical to that submitted in the Technical and Scientific Report.[329] Additionally, the TFJA explained:[330]

> . . . [I]t is clearly observable that the authority was fully enabled, in the case of **doubt about the authenticity of a private document**, as is the case, **to request a comparison of signatures, letters or fingerprints, in order to corroborate their authenticity**.

322 Respondent's Counter-Memorial, ¶¶ 360-362.
323 Claimant's Memorial, ¶ 165.
324 Claimant's Memorial, ¶ 162; **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198.
325 Claimant's Memorial, ¶ 162; **C-0170**, TFJA Ruling, 21 March 2018, pp. 197, 200.
326 **C-0170**, TFJA Ruling, 21 March 2018, p. 201.
327 **C-0170**, TFJA Ruling, 21 March 2018, pp. 196-198.
328 **C-0170**, TFJA Ruling, 21 March 2018, pp. 201-203.
329 **C-0170**, TFJA Ruling, 21 March 2018, p. 201.
330 **C-0170**, TFJA Ruling, 21 March 2018, p. 203 (free translation).

b. With respect to the expert report on marine biology, the TFJA did not mince its words, either:[331]

> Por lo tanto, le **asiste la razón** a la parte actora en el sentido que la autoridad vulneró su derecho al debido proceso, ya que en relación a la prueba pericial ofrecida por la recurrente, la autoridad ordenó su desechamiento hasta el momento en el que resolvió el recurso de revisión interpuesto por ésta; no obstante que, en términos de las disposiciones que regulan la tramitación y substanciación del citado medio de defensa, debió haber tramitado y en su caso, desahogado las pruebas correspondientes, conforme a derecho procediera.
>
> Además de lo anterior, debe resaltarse que el desechamiento efectuado por la autoridad demandada respecto de la prueba pericial en materia de biología marina, en sí mismo resulta ilegal, puesto que la autoridad demandada al aportar los motivos y fundamentos en los que basó dicho desechamiento, señaló al respecto que su decisión obedeció a que los peritos designados por la parte actora son de **nacionalidad extranjera**, y que por lo tanto carecen de los requisitos previstos en los artículos 15, 17, 23, 24, 25 primer párrafo, 26 y 29 de la Ley Reglamentaria del artículo 5º Constitucional, para poder ejercer la profesión que se refiere, **sin ofrecer los elementos de motivación que la llevaron a concluir que dichas personas, efectivamente tenían nacionalidad extranjera**, y que por ello incumplían con las exigencias para el ejercicio de la profesión implicada en las materias sobre las que versa la prueba pericial de mérito.

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331 **C-0170**, TFJA Ruling, 21 March 2018, p. 208. In English, this passage reads: "Therefore, **reason assists** the acting party in the sense that the authority violated its right to due process, given that, in relation to the expert report offered by appellant, the authority ordered it dismissed at the moment in which it resolved the review petition filed by [the appellant]; notwithstanding that, in terms of the dispositions that regulate the processing and substantiation of the referenced means of defense, it should have processed and, if appropriate, provided the corresponding proof, according to what the law dictates. Besides the foregoing, it must be highlighted that the dismissal effectuated by the authority with respect to the expert report on the subject of marine biology is by itself illegal, because the sued authority, when explaining the motives and foundations on which it based this dismissal, indicated in that respect that its decision was due to the fact that the experts designated by the acting party are **foreign nationals**, and that therefore they lack the requirements contemplated in articles 15, 17, 23, 24, 25 first paragraph, 26 and 29 of the Regulating Law of the 5th article of the Constitution to be able to exercise the profession referred to, **without providing the motivating elements that led it to conclude that said persons were effectively foreign nationals**, and that therefore they violated the requirements for the exercise of the profession implicated in the subjects which the merits expert report discusses." (free translation).

E. Dredging Is an Established Process, and Odyssey Had Enlisted World-Class Dredging and Environmental Experts to Help Develop Its Dredging Operations and Protect the Environment

122. It is Mexico's case, based on the evidence of WGM, that the Project involves novel production concepts and unproven technology and on this basis was properly rejected.[332] This argument formed no part of the 2016 and 2018 Denials. It appears to be based on WGM's peculiar suggestion that the marine dredging techniques proposed by the Project had not been used in conventional (*i.e.* terrestrial) phosphate mining.[333]

123. In making these assertions, Respondent neither challenges nor engages with any of Claimant's factual or expert evidence confirming that the proposed dredging and processing would have used standard techniques utilized in many comparable projects. Deltares concludes that the Project uses proven technology with well-established techniques to minimize potential environmental impact, stating:

a. "Deltares supports the evaluation, reasoning and conclusions on the technical and operational feasibility of the phosphate sands extraction process. The approach proposed is a well-established work method, using a Trailing Suction Hopper Dredge (TSHD) with well-tested techniques to minimize environmental impact."[334]

b. ". . . [T]railing suction hopper dredging can also be considered a standard, mature and proven technology in offshore mineral extraction and deeper waters."[335]

124. Dr. Selby—who has decades of operational management experience in the dredging industry and spent many years directly responsible for marine mineral resource management and operations in the UK[336]—has provided expert testimony evaluating the methodology and technical feasibility of the Project's dredging and processing concepts, as well as assessing the reasonableness of the production rate, cost, and timeline

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332 Respondent's Counter-Memorial, ¶ 696; WGM ER, ¶¶ 102-110.

333 WGM ER, ¶ 102. As discussed in Section V.C.3(b)(i)-(ii), the dredging and separation technologies used in the Don Diego Project have been used around the world for decades, if not longer. With respect to phosphates specifically, Phosphate QP Glen Gruber notes that dredging, particle sizing, and processing on vessels dates back to at least to the 1890s, with phosphate river pebble mining. (Second Expert Report of Glenn Gruber, dated 29 June 2021 ("**Gruber ER2**"), pp. 10-11.) Phosphate major The Mosaic Company uses dredging in its Wingate mine, located in Florida. (Gruber ER2, p. 11.)

334 Deltares ER1, Summary, p. 5.

335 Deltares ER1, Section 3.5, pp. 16-17.

336 Selby ER1, ¶¶ 6-9.

estimates.[337] That evidence is unchallenged (and unmentioned) in Respondent's Counter-Memorial. As part of his evidence, Dr. Selby notes that "[d]redging is a well-established technology,"[338] and "the Project is directly analogous to other marine sand extraction that occurs elsewhere in the world,"[339] concluding, after a detailed analysis, that "the proposed utilisation of a TSHD for the Don Diego Phosphorite Project is consistent with numerous, proven applications for the dredging of similar deposits, at similar production rates, operating in similar conditions around the world."[340]

125. Dr. Newell, the Project's Chief Scientist,[341] and Mr. Bryson, Odyssey's engineering Project Manager and principal mining engineer,[342] give similar, corroborative testimony. Dr. Newell stated, for example, that "[t]railing suction hopper dredgers have a long history and have been widely used in Europe, the United States and elsewhere, often in environmentally sensitive locations, and often in accordance with strict environmental standards and expectations. This means there is a lot of knowledge as to how to dredge with minimal environmental impact. The Project drew on best practices from that experience."[343] Mr. Bryson explains the engineering concepts in detail, emphasizing that the approach was to use "proven, well-understood dredging technology."[344] The evidence of Dr. Newell and Mr. Bryson is also unchallenged. In his Second Expert Report, Mr. Fuller testifies that "[t]he Project flowsheet is based on commercial off-the-shelf (COTS) technologies and equipment,"[345] adding that the "processing operations and technologies proposed for the Project are well understood."[346]

126. Respondent and WGM also ignore the fact that dredging operations would have been conducted by Royal Boskalis group and would have benefitted from Boskalis' dredging

337 Selby ER1, Section VI.
338 Selby ER1, ¶ 96.
339 Selby ER1, ¶ 96.
340 Selby ER1, ¶ 103.
341 Newell WS, ¶ 3.
342 Bryson WS1, ¶ 2.
343 Newell WS, ¶ 23.
344 Bryson WS1, ¶ 130.
345 Second Expert Report of Lomond & Hill, dated 29 June 2021 ("**Lomond & Hill ER2**"), ¶ 3.1.
346 Lomond & Hill ER2, ¶ 3.5.

and processing experience and capabilities (and, as Dr. Newell notes, their "successful record of environmentally sustainable dredging"[347]).

a. Dr. Selby states:[348]

> Boskalis is one of the largest marine contractors, with a strong reputation for delivery of dredging and infrastructure projects in a wide range of marine environments around the world. Boskalis has over 10,000 employees, 700 vessels and floating equipment and a turnover of €2.6 billion as of 2019. Boskalis partnered with Odyssey on the Don Diego Project and has provided dredging, discharging and production advice.
>
> . . . By selecting Boskalis as a partner, there is a clear benefit to the Don Diego Project arising from Boskalis' real-world, diverse and practical operational experience leading directly to an increased level of confidence in the Project.

b. Mr. Bryson discusses Boskalis' experience and capabilities in materials processing at length,[349] citing, for example, their acquisition of one of the world's leading materials processing companies and various projects wherein Boskalis had processed dredged sediment.[350]

c. Mr Fuller states that "Boskalis's mining method is based on its standard and proven dredge technologies."[351]

127. Finally, as discussed in further detail below, dredging and on-vessel particle sizing has been used in phosphate extraction and processing in Florida for over 100 years,[352] and such dredging continues today,[353] contrary to WGM's statement that it has not been deployed in terrestrial settings.[354]

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347 Newell WS, ¶ 17.
348 Selby ER1, ¶¶ 91-92.
349 Bryson WS1, ¶¶ 32-39.
350 Bryson WS1, ¶ 32-34.
351 Lomond & Hill ER2, ¶ 3.6(c).
352 Gruber ER2, pp. 10-11; Lomond & Hill ER2, ¶ 3.6(a).
353 Gruber ER2, pp. 10-11.
354 WGM ER, ¶ 102

III. JURISDICTION AND ADMISSIBILITY

A. Respondent's Jurisdictional Objection Has No Merit

128. In its Memorial, Claimant sets out the basis for the Tribunal's jurisdiction to determine its claims against Mexico brought on its own behalf under NAFTA Article 1116 and on behalf of ExO, its Mexican subsidiary which Odyssey indirectly majority owns and controls, under NAFTA Article 1117.[355] Respondent does not dispute Odyssey's standing under NAFTA Article 1116 and has clearly accepted this Tribunal's jurisdiction to hear Odyssey's claims under NAFTA Article 1116.[356]

129. Mexico assumes in its Counter-Memorial that Odyssey's claim in this arbitration is solely on behalf of ExO pursuant to NAFTA Article 1117.[357] Respondent further alleges that Article 1116 and Article 1117 claims "cannot coexist"[358] and that Odyssey must "clarify"[359] whether its claim was filed under Article 1116 or Article 1117. But this rationale contradicts a long line of NAFTA cases wherein parties have been allowed to bring proceedings under Articles 1116 and 1117 "concurrently."[360] In fact, several claimants have done so in NAFTA Chapter 11 proceedings, without NAFTA Parties objecting.[361] Thus, Odyssey has standing to bring claims under both Articles 1116 and 1117 of NAFTA.

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355 Claimant's Memorial, ¶¶ 188-198.

356 *See* Respondent's Counter-Memorial, Section III.A (limited to standing under Article 1117). In connection with its decision on the Application for Interim Measures, the Tribunal likewise recognized that "the jurisdictional objection filed by the Respondent is only partial, since it does not include the jurisdiction of the Tribunal to hear the claim under Article 1116 of NAFTA," and thus concluded that "its *prima facie* jurisdiction is not under question." Decision on the Claimant's Request for Interim Measures, Procedural Order No. 4, 25 May 2021, ¶ 51.

357 Respondent's Counter-Memorial, ¶ 622.

358 Respondent's Counter-Memorial, ¶ 621.

359 Respondent's Counter-Memorial, ¶ 622.

360 **CL-0078**, *Mondev International Ltd. v. United States* (ICSID Case No. ARB(AF)/99/2) Award, 11 October 2002, ¶ 86; **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton, and Bilcon of Delaware, Inc. v. Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019, ¶¶ 381-383; **CL-0019**, *B-Mex, LLC and Others v. United Mexican States* (ICSID Case No. ARB(AF)16/3) Partial Award, 19 July 2019, ¶¶ 126-128.

361 *See* **CL-0198**, *Waste Management, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/98/2) Memorial, 29 September 1999, ¶¶ 2.2, 4.3; **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶¶ 40, 83, 84; **CL-0074**, *Methanex Corporation v. United States of America* (UNCITRAL) Final Award on Jurisdiction and Merits, 3 August 2005, Part II, Chapter D, ¶¶ 29-30; **CL-0199**, *The Loewen Group, Inc. and Raymond L. Loewen v. United States of America* (ICSID Case No. ARB(AF)/98/3) Award, 26 June 2003, ¶ 9.

130. With respect to NAFTA Article 1117, Respondent's objection to Odyssey's standing is half-hearted at best. The evidentiary record, which Respondent completely disregards, firmly establishes that Odyssey indirectly majority owns and exercises legal and *de facto* control over ExO. This evidence includes, among other things:

a. Annex A to the Notice of Arbitration, submitted in accordance with Articles 1121(1) and 1121(2) of NAFTA, which contains Odyssey's and ExO's consent to arbitration and waiver of their right to initiate or continue any proceedings in a court of law or before an administrative tribunal with respect to Mexico's breaches of NAFTA (other than proceedings for injunctive, declaratory, or other extraordinary relief not involving the payment of damages). The document is signed by Mark Gordon both in his capacity as Odyssey's CEO and then-President and in his capacity as ExO's Vice President.

b. Claimant's publicly-available Form 10-K Annual Reports, which clearly demonstrate that Odyssey has held a controlling interest in ExO since 2013 and that its consolidated audited financial statements include ExO.[362]

c. A chart in the Memorial setting out Claimant's shareholding structure and demonstrating how its interest in ExO is held.[363] This chart is discussed by Mr. Gordon in his First Witness Statement[364] and supported by Certificates of the Treasurer of ExO and Oceánica Resources S. de R.L. (**"Oceánica"**), which certify that as of 29 March 2019, Oceánica holds 99.998% of ExO and is itself majority held (53.89%) by Odyssey's wholly-owned subsidiary, Odyssey Marine Enterprises, Ltd.[365]

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362 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020, pp. 4 ("Through our majority stake in Oceanica Resources S. de R.L., a Panamanian company ('Oceanica'), we control [ExO]"), 6 ("In February 2013, we disclosed Odyssey's ownership interest, through Odyssey Marine Enterprises, Ltd., a wholly owned Bahamian company ('Enterprises'), in Oceanica Resources, S. de R.L., a Panamanian company ('Oceanica'), and Exploraciones Oceánicas, S. de R.L. de C.V. ('ExO')"), 17 ("Starting in 2013, we became the controlling shareholder of Oceanica. Our financial statements thus include the financial results of Oceanica and its subsidiary."), 35 (report from public accounting firm stating the auditors "audited the accompanying consolidated balance sheet of Odyssey Marine Exploration, Inc. and subsidiaries (the Company)"). *See also* **C-0372**, Odyssey Marine Exploration Inc. Form 10-K for the period ending 31 December 2013, 17 March 2014, pp. 15, 46; **C-0226**, Exploraciones Oceanicas Shareholder Registry, 18 February 2013, p. 7 (recording Oceánica's 99.99% shareholding interest).

363 Claimant's Memorial, ¶ 197.

364 Gordon WS1, ¶ 7.

365 **C-0183**, Certificate of the Treasurer, ExO Stock Ownership, 29 March 2019; **C-0184**, Certificate of the Treasurer, Oceanica Stock Ownership, 29 March 2019; **C-0212**, Certificate of the Treasurer, OMEX Enterprises Stock Ownership, 29 March 2019; **C-0211**, Certificate of the Treasurer, OMEX Stock Ownership, 29 March 2019. *See also* **R-0107**, Odyssey Marine Exploration Inc. Press Release, 22 June 2015, p. 1, stating that Odyssey controls ExO through its 54% ownership in Oceánica Resources.

131. With no answer to this evidence, which stands uncontroverted and disposes of Respondent's jurisdictional objection, Respondent resorts to a tortured and erroneous reading of the tribunal's decision in the case of *B-Mex v. Mexico*.[366] Respondent's arguments on what constitutes ownership and control under NAFTA Article 1117 find no support in the text of the Treaty or in any of the cases construing it and should be rejected.

1. Respondent's Analysis of NAFTA Article 1117 Is Flawed

132. NAFTA Article 1117 allows investors to bring claims on behalf of enterprises they directly or indirectly own or control.[367] As explained by the tribunal in *Waste Management II*, "Article 1117 deals with the special situation of claims brought by investors on behalf of enterprises established in the host State. But it still allows such claims where the enterprise is owned or controlled 'directly or indirectly', i.e., through an intermediate holding company which has the nationality of a third State."[368] Thus, the *Waste Management II* tribunal found it had jurisdiction over claims brought by a U.S. investor on behalf of the Mexican enterprise that it indirectly owned or controlled.[369]

133. Citing *B-Mex v. Mexico,* Respondent contends that Odyssey's 54% indirect shareholding in ExO is not enough to establish control for purposes of NAFTA Article 1117.[370] More specifically, it relies on a single passage taken out of context in which the tribunal observed: "the requisite share ownership that confers the legal capacity to control is not necessarily 50% + 1 of the outstanding stock. What that threshold is will vary for each enterprise, depending on what its by laws [sic] and/or the governing law provide for."[371] Notably, this passage is taken from a discussion of the term "owns" as it is used in Article 1117, not the concept of control.

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366 Respondent's Counter-Memorial, ¶ 401.

367 **CL-0081**, NAFTA, art. 1117(1).

368 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 84.

369 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 85.

370 Respondent's Counter-Memorial, ¶ 401.

371 Respondent's Counter-Memorial, ¶ 401, citing **CL-0019**, *B-Mex, LLC and Others v. United Mexican States* (ICSID Case No. ARB(AF)16/3) Partial Award, 19 July 2019, ¶¶ 198, 200-203.

134. Contrary to Respondent's claim, the *B-Mex* tribunal does not endorse (or even suggest) that more than 50% ownership does not confer legal control. Rather, it found that under Article 1117, "[t]here is no specific manner or form that 'control' must take."[372] And in the discussion that followed, the *B-Mex* tribunal endorsed the *obiter* in *Agua del Tunari*, in which a majority determined: "in the circumstances of this case, **where an entity has both majority shareholdings and ownership of a majority of the voting rights**, control as embodied in the operative phrase 'controlled directly or indirectly' exists."[373]

135. Tellingly, Respondent also studiously ignores the recent NAFTA award in *Nelson v. Mexico* and its own position in that case. In *Nelson*, which Claimant discusses in its Memorial,[374] the tribunal concluded (based on Mexico's arguments) that an entity has corporate control for purposes of Article 1117 when it owns "more than 50% of the shares in a corporation."[375] Mexico had specifically argued that, under Article 1117, control required "[o]wnership of more than 50% of the shares in a corporation."[376] The tribunal further noted that the parties were in agreement that "majority ownership is a manner of legal control for purposes of NAFTA Article 1117."[377]

136. In addition, a number of tribunals have expressed the view that majority ownership of the share capital—and the capacity to cast a majority of the votes that comes with it—is not only circumstantial evidence of control, but even creates a "presumption of control."[378] As noted by the tribunal in *Occidental v. Ecuador*, this presumption that a

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372 **CL-0019**, *B-Mex, LLC and Others v. United Mexican States* (ICSID Case No. ARB(AF)16/3) Partial Award, 19 July 2019, ¶ 212.

373 **CL-0019**, *B-Mex, LLC and Others v. United Mexican States* (ICSID Case No. ARB(AF)16/3) Partial Award, 19 July 2019, ¶ 217, citing **CL-0153**, *Aguas del Tunari, S.A. v. Republic of Bolivia* (ICSID Case No. ARB/02/3) Decision on Respondent's Objections to Jurisdiction, 21 October 2005, ¶ 264 (emphasis added).

374 Claimant's Memorial, ¶ 196.

375 **CL-0127**, *Mr. Joshua Dean Nelson v. The United Mexican States* (ICSID Case No. UNCT/17/1) Final Award, 5 June 2020, ¶¶ 188, 198.

376 **CL-0178**, *Mr. Joshua Dean Nelson v. The United Mexican States* (ICSID Case No. UNCT/17/1) Respondent's Memorial on Jurisdiction, 13 June 2019, ¶¶ 68-69.

377 **CL-0127**, *Mr. Joshua Dean Nelson v. The United Mexican States* (ICSID Case No. UNCT/17/1) Final Award, 5 June 2020, ¶ 198.

378 **CL-0155,** *Caratube International Oil Company v. Republic of Kazakhstan* (ICSID Case No. ARB/08/12) Decision on the Annulment Application of Caratube International Oil Company LLP, 21 February 2014, ¶ 255; *see also* **CL-0180**, *Occidental Petroleum Corporation and Occidental Exploration and Production*

majority shareholder also controls the company "can only be rebutted if there are special elements which create doubts about the owner's control."[379] Here, Respondent does not seriously dispute that Claimant indirectly owns 54% of ExO, nor has it rebutted the presumption of control that naturally follows from its majority holding.

2. Odyssey Indirectly Controls ExO and Is Thus Entitled to Bring a Claim Under Article 1117 of NAFTA

137. The record evidence establishes that Claimant indirectly controls ExO and therefore has standing to bring claims on ExO's behalf under NAFTA Article 1117. In brief, this evidence includes:

a. ExO's Shareholder Registry.[380] This document shows that Oceánica has held 99.99% of ExO since 2013.

b. ExO's Amended Articles of Association.[381] This document not only records that Oceánica holds 99.99% of ExO, but also names Odyssey's CEO, Mark Gordon as ExO's Vice President, and Odyssey's Treasurer, Jay Nudi, as ExO's Treasurer.

c. Certificates from ExO's Treasurer,[382] Oceánica's Treasurer,[383] Odyssey Marine Enterprises, Ltd.'s Treasurer,[384] and Marine Exploration Holdings, LLC's Treasurer.[385] These documents evidence that Odyssey indirectly controls ExO through its 53.89% ownership interest of Oceánica. This holding structure is mapped out in the chart at paragraph 197 of Claimant's Memorial.

d. Odyssey's Form-10-K Annual Report for the period ending 31 December 2019.[386] Form 10-K Annual Reports are governed by U.S. federal securities laws, are required to be filed with the U.S. Securities and Exchange Commission, and are publicly available. As relevant here, Odyssey's Form 10-K states that Odyssey has been "the controlling shareholder of Oceanica" since 2013, and therefore,

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Company v. The Republic of Ecuador (ICSID Case No. ARB/06/11) Decision on Annulment of the Award, 2 November 2015, ¶ 104.

379 **CL-0180**, *Occidental Petroleum Corporation and Occidental Exploration and Production Company v. The Republic of Ecuador* (ICSID Case No. ARB/06/11) Decision on Annulment of the Award, 2 November 2015, ¶ 104.

380 **C-0226**, Exploraciones Oceanicas Shareholder Registry, 18 February 2013.

381 **C-0057**, Amendment to ExO's Articles of Incorporation, 31 May 2013.

382 **C-0183**, Certificate of the Treasurer, ExO Stock Ownership, 29 March 2019.

383 **C-0184**, Certificate of the Treasurer, Oceanica Stock Ownership, 29 March 2019.

384 **C-0212**, Certificate of the Treasurer, OMEX Enterprises Stock Ownership, 29 March 2019.

385 **C-0211**, Certificate of the Treasurer, OMEX Stock Ownership, 29 March 2019.

386 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020.

Odyssey's "financial statements . . . include the financial results of Oceanica and its subsidiary."[387]

138. Respondent has made no effort to engage with this evidence whatsoever. Indeed, in its Counter-Memorial, Respondent devotes a single sentence to discussing this proof, which is limited to a baseless suggestion that statements in a public reporting document should be discounted as "self-serving."[388] Respondent's jurisdictional objection is not serious.

139. This notwithstanding, Claimant also submits further evidence that it indirectly owns and controls ExO, which has been disclosed in the document production stage, as detailed below:

a. ExO's Minutes of its Annual General Meeting of Shareholders, dated 17 May 2019, which show that Oceánica owned 99.99% of the shares in ExO when the arbitration was commenced (and still does so);[389]

b. Oceánica's October 2015 and May 2020 public deeds, which confirm that Odyssey Marine Enterprises Ltd. (Bahamas) owned 53.89% of Oceánica's shares when commencing this arbitration and retains a majority shareholding interest in Oceánica;[390]

c. Odyssey Marine Enterprises Ltd. (Bahamas)'s Certificate of Shareholding, which shows that Marine Exploration Holdings, LLC (US) owns 100% of the shares in Odyssey Marine Enterprises Ltd. (Bahamas);[391] and

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387 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020, pp. 4, 6, 17, 35; *see also* **C-0372**, Odyssey Marine Exploration Inc. Form 10-K for the period ending 31 December 2013, 17 March 2014, pp. 15, 53.

388 Respondent's Counter-Memorial, ¶ 403.

389 **C-0447**, Resolutions of the Annual General Meeting of Members of Members of Exploraciones Oceanicas, 17 May 2019, p. 1; Second Witness Statement of Mark Gordon, dated 29 June 2021 ("**Gordon WS2**"), ¶ 47.

390 **C-0390**, Public Registry Deed for Oceanica Resources, S. de. R. L., 23 October 2015, pp. 4-5 (confirming the ownership of the shares in the company and showing that Odyssey Marine Enterprises Ltd. held 54,000,000 of the participation quotas in the company on 23 October 2015); **C-0450**, Public Registry Deed No. 1,878 for Oceanica Resources, S. de R. L., 15 May 2020, p. 8 (confirming that in May 2020, Odyssey Marine Enterprises Ltd. continued to hold 54,000,000 shares; reference is made to the Spanish version of this document, as the English version has a typographical error and mistakenly refers to 54,100,000 million shares.); **C-0451**, Proof of Registration (Prueba de Inscripción) of Public Deed no. 1,878, 29 May 2020. These documents also confirm the numbers contained in Mr. Nudi's certificate of ownership (**C-0184**), which was submitted alongside Claimant's Memorial and ignored by Respondent in launching its jurisdictional objection.

391 **C-0368**, Marine Exploration Holdings LLC Certificate of Shares, 17 April 2013, showing that Marine Exploration Holdings LLC is the registered holder of the 500,000,000 issued shares in Odyssey Marine Enterprises Ltd. There have been no changes to the ownership of any of the shares in the company since this date. Marine Exploration Holdings, LLC (US), Odyssey's wholly owned subsidiary, owns 100% of the

d. Odyssey Marine Exploration Holdings, LLC (US)'s 2013 Certificate of Incorporation, which shows that Odyssey Marine Exploration, Inc. owns 100% of the shares in Marine Exploration Holdings, LLC (US).[392]

140. These documents further show that ExO is virtually fully (99.99%) owned by Oceánica, and that Oceánica is indirectly majority-owned and controlled by Odyssey through its wholly-owned intermediaries.[393] Odyssey's majority ownership interest in Oceánica, held through its wholly-owned subsidiary, Odyssey Marine Enterprises Ltd., also affords it controlling voting rights in Oceánica.[394]

141. [redacted][395] Both the 53.89% majority shareholding structure and the [redacted] voting power thus demonstrate conclusively that Odyssey exercises indirect legal control over Oceánica and, in turn, over ExO.

142. Mexico asserts, without any evidence or explanation, that Odyssey does not have control of ExO because it has "pledged the majority of its assets to MINOSA and to Monaco," and that "Claimant appears to have sold a substantial interest in this arbitration to the firm

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shares in Odyssey Marine Enterprises Ltd. (Bahamas) which, in turn, holds 53.89% of the shares in Oceánica (Panama), which ultimately holds 99.99% shares in ExO.

392 **C-0369**, Marine Exploration Holdings LLC Operating Agreement, 17 April 2013, p. 7, showing that Odyssey Marine Exploration, Inc. has a 100% membership interest in Marine Exploration Holdings, LLC (US). There have been no changes to the ownership of any of the shares in the company since this date. Odyssey Marine Exploration, Inc. owns 100% of the shares in Marine Exploration Holdings, LLC (US), which owns 100% of the shares in Odyssey Marine Enterprises Ltd. (Bahamas), which, in turn, holds 53.89% of the shares in Oceánica (Panama), which holds 99.99% of shares in ExO.

393 When Odyssey filed its Notice of Arbitration, Odyssey indirectly owned 53.89% of the shares of Oceánica. **C-0427**, 2018 Subsidiaries of the Registrant; **C-0445**, 2019 Subsidiaries of the Registrant. *See also* Gordon WS2, ¶ 47.

394 When this arbitration commenced in 2019, Odyssey Marine Enterprises Ltd. owned 54,000,000 participation quotas in Oceánica out of a total of 100,200,000 outstanding quotas (*see* **C-0184**, Certificate of the Treasurer, Oceanica Stock Ownership, 29 March 2019; **C-0390**, Public Registry Deed for Oceanica Resources, S. de R. L., 23 October 2015, p. 4; and **C-0450**, Public Registry Deed No. 1,878 for Oceanica Resources, S. de R. L., 15 May 2020, p. 8). This gave Odyssey Marine Enterprises Ltd., a company that is wholly indirectly owned by Odyssey Marine Exploration, Inc., a majority voting control over Oceánica as confirmed by Panamanian law. *See* **C-0385**, Ley 4 que regula las sociedades de responsabilidad limitada, 9 January 2009, art. 36 (Article 36 of Law 4 regulating limited liability societies), which grants majority-owners the power to make decisions: "The agreements among partners will be adopted by those who represent the majority of the social capital." (free translation); Gordon WS2, ¶ 47.

395 **C-0370**, DNA Ltd., Inc. Voting Proxy, 19 August 2013; Gordon WS2, ¶ 47.

Poplar Falls LLC."[396] Not only is Mexico's reasoning less than opaque; its allegations are also baseless. None of MINOSA, Monaco, nor Poplar Falls currently have or have ever had any authority to exercise control over ExO. Mexico's allegations are answered by the same publicly available documents it cites to elsewhere in the Counter-Memorial, describing these transactions.[397]

143. Finally, Odyssey has also exercised *de facto* control over ExO since it was founded by managing ExO's day-to-day and strategic decisions and has always controlled ExO's Board.[398] For example, Mr. Gordon, Odyssey's CEO, has sat as ExO's Vice President since 2013;[399] is currently the President of Oceánica and also served as Oceánica's Administrator,[400] Mr. Gregory Stemm, Odyssey's Chairman Emeritus, has sat as ExO's President since 2013; and Mr. Jay Nudi, Odyssey's Treasurer, has sat as ExO's Treasurer since 2013.[401]

144. For the reasons delineated above, the Tribunal should find that Claimant has standing to bring claims on behalf of ExO under NAFTA Article 1117 and dismiss Mexico's jurisdictional objection.

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396 Respondent's Counter-Memorial, ¶ 405.

397 For example, all loans secured by Odyssey with Monaco, MINOSA, and others have been disclosed in Odyssey's 2019 10-K document (**C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020), which is repeatedly cited by Respondent while discussing these transactions. (Respondent's Counter-Memorial, ¶¶ 44-63.) None of these loans has altered Odyssey's indirect majority holdings in Oceánica.

398 According to ExO's Articles of Incorporation, there are four seats in ExO's Board. Three of these have been occupied by individuals affiliated with Odyssey (Mr. Stemm, Mr. Gordon, and Mr. Nudi), and one by Mr. De Narvaez, since 2013. *See* **C-0057**, Amendment to ExO's Articles of Incorporation, 31 May 2013, p. 10.

399 In his capacity as Vice President, the shareholders of ExO have granted Mr. Gordon the capacity "to submit to arbitration" on behalf of ExO, which further proves that Odyssey, through its CEO, Mr. Gordon, is entitled to bring this claim on behalf of ExO. *See* **C-0057**, Amendment to ExO's Articles of Incorporation, 31 May 2013, p. 10 (free translation); Gordon WS2, ¶ 47.

400 **C-0450**, Public Registry Deed No. 1,878 for Oceanica Resources, S. de R. L., 15 May 2020, pp. 10-11; Gordon WS2, ¶ 47.

401 **C-0057**, Amendment to ExO's Articles of Incorporation, 31 May 2013, p. 10; **C-0447**, Resolutions of the Annual General Meeting of Members of Exploraciones Oceanicas, 17 May 2019, p. 6.

B. The Testimony of [redacted] Is Admissible and Credible

145. Odyssey has already identified the evidence that corroborates [redacted] SEMARNAT's handling of the MIA.[402]

146. Mexico argues that [redacted][403] Mexico has it backwards. That [redacted] were willing to provide sworn evidence that could be (and, indeed, has been) construed as anti-Mexican—particularly in the current political climate—makes their testimony more, not less, credible. [redacted].[404]

147. Nor is there even a scintilla of truth in Respondent's outrageous accusation that Odyssey plans to compensate any of its witnesses based upon the result in this case.[405] [redacted] As Respondent has admitted,[407] reimbursement for the time required to prepare a witness statement is an accepted practice in international arbitration.[408] It is also permissible under Mexican

402 *See supra*, ¶ 88.

403 Respondent's Counter-Memorial, ¶¶ 208, 210, 421.

404 Respondent's Counter-Memorial, ¶ 208.

405 Respondent's Counter-Memorial, ¶¶ 424-425.

406 [redacted]

407 Respondent's Counter-Memorial, ¶ 427.

408 *See* **RL-0010**, IBA Guidelines on Party Representation in International Arbitration, 25 May 2013, Guideline 25, p. 14 ("A Party Representative may pay, offer to pay, or acquiesce in the payment of: (a) expenses reasonably incurred **by a Witness** or Expert in preparing to testify or testifying at a hearing; (b) reasonable compensation **for the loss of time incurred by a Witness in testifying and preparing to testify** . . . .") (emphasis added). *See also* **CL-0214**, P. Ashford, "Chapter 34: Expenses of Witnesses," Handbook of International Commercial Arbitration (2d. ed. 2014), pp. 291-293; **CL-0207**, J.R. Profaizer, et al., "Chapter 24: Costs," in: J. Trenor, ed., *The Guide to Damages in International Arbitration*, Global Arbitration Review (GAR) (4th. ed. 2021), pp. 353-354; **CL-0216**, T.H. Webster and M.W. Bühler, Handbook of ICC Arbitration, Commentary and Materials (3d. ed. 2014), ¶¶ 37-53, 37-54.

law,[409] not proscribed under Ontario law,[410] and cognizable as a legitimate cost under Article 38(d) of the 1976 UNCITRAL Arbitration Rules.[411]

148. Mexico's attempt to taint these witnesses by referring to unrelated administrative investigations[412] is similarly unavailing.

a. First, "[redacted]."[413]

b. Second, [redacted][415] In fact, this information was readily available to Respondent if it would have properly requested it from SEMARNAT's OIC instead of relying on dubious newspaper articles. [redacted]

409 Expert Report of Sergio Huacuja, dated 25 June 2021 ("**Huacuja ER**"), ¶¶ 61-66.

410 The Ontario International Commercial Arbitration Act, a Model Law statute, does not prescribe a definition of costs for international arbitrations seated within the Province's jurisdiction. **CL-0200**, The Ontario International Commercial Arbitration Act, 2017, S.O. 2017, C. 2, Sched. 5, a Model Law Statute.

411 *See* **CL-0201**, D. Caron and L. Caplan, "The UNCITRAL Arbitration Rules: A Commentary" (2d. ed. 2012), pp. 844-845, citing **CL-0202**, UNCITRAL Summary Record of the 12th Meeting, 22 April 1976, UN Doc. A/CN.9/9/C.2/SR.12, ¶¶ 76-78, in which the meeting participants adopted the Mexican delegate's proposal to include subsistence costs within the definition. Caron and Caplan observed how the Article 38(d) reference to "other expenses" of witnesses should be construed both as including "the subsistence costs of witnesses" and "costs in connection with witnesses whose testimony is presented in the form of affidavits." Caron and Kaplan's commentary was also cited with approval in **CL-0203**, J. Paulsson and G. Petrochilos, UNCITRAL Arbitration (2018), p. 364.

412 Respondent's Response to Interim Measures Request, ¶ 39.

413 Claimant's Interim Measures Request, ¶ 8 (citing Respondent's Counter-Memorial, ¶¶ 199, 201-202, fns. 208-210, 212-215). As Claimant explains at fn. 11 in its Interim Measures Request, [redacted]

414 Claimant's Interim Measures Request, ¶ 9 (emphasis added); **C-0334**, TFJA's Decision, 23 November 2018, pp. 3-4, 16.

415 **C-0334**, TFJA's Decision, 23 November 2018, p. 16.

[redacted][416]

149. Further, Respondent's assertion that [redacted] could have breached Mexican criminal law,[417] particularly Articles 214 and 220 of the Mexican Criminal Code, is simply wrong, as explained in Claimant's Interim Measures Request.[418]

150. Sergio Huacuja, Claimant's expert, confirms that [redacted] could not have been subject to criminal liability, as Mexico argues, for several reasons.[419] As Mr. Huacuja explains, both Articles 214 and 220 would have required [redacted] and acting as a witness cannot be considered a "benefit," [redacted] not criminally liable under Mexican law.[421]

151. [redacted][422] Article 55 provides as follows:[423]

> The public servant who acquires, either for himself or for those listed in article 52 of this law, real property, chattels, and stock that could increase his value, or generally, that ameliorate his condition, as well as he [the public servant] who obtains any advantage or private benefit, as a result of privileged information of which he had knowledge, is guilty of improper use of information.

152. [redacted].[424] Contrary to Mexico's allegations, these articles are not applicable [redacted]

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416 **R-0158**, Oficio del Órgano Interno de Control de la SEMARNAT, 21 April 2021, p. 2 (free translation; emphasis added). The text in Spanish reads: "**la cual se dejó** sin efectos en base al resultado del juicio contencioso administrativo que se promovió en su contra."

417 Respondent's Counter-Memorial, ¶ 412, fn. 475.

418 Claimant's Interim Measures Request, ¶¶ 14-17; **R-0144**, Código Penal Federal, 14 August 1931, arts. 214, 220.

419 Huacuja ER, ¶¶ 33-43.

420 Huacuja ER, ¶¶ 36, 39, 41.

421 Huacuja ER, ¶¶ 33-43.

422 Respondent's Counter-Memorial, ¶¶ 411-412.

423 **R-0057**, Ley General de Responsabilidades Administrativas, 18 July 2016 ("**LGRA**"), art. 55 (free translation).

424 **R-0057**, LGRA, 18 July 2016, art. 56.

[redacted] because they are not intended to cover cases of witness testimony.[425] As Mr. Huacuja explains, Articles 55 and 56 of the LGRA are intended to combat corruption and to prevent "extreme benefits for those who intervene in the practice or in favor of any of the parties at the expense of public losses."[426] Conversely, the purpose of providing a witness statement is to facilitate the "inquiry into the truth" related to certain facts, and the legal regime of the LGRA itself contemplates that fact witnesses have an obligation to come forward.[427] Therefore, acting as a witness in a proceeding is not the kind of conduct that Articles 55 and 56 aim to deter.

153. [redacted].[428]

154. [redacted] Therefore, Mexico's accusations [redacted] are baseless.

155. Further, if [redacted] had breached Mexican law (which he did not), [redacted] would still be admissible under international law. Indeed, the tribunal in *EDF v. Romania*, cited by Respondent,[430] held that "principles applicable to the admissibility of evidence in international arbitration are to be found in public international law, not in municipal

425 Huacuja ER, ¶¶ 61-80.

426 Huacuja ER, ¶ 50, citing **C-0464**, Iniciativa Ciudadana de Ley General de Responsabilidades Administrativas - Exposición de Motivos, 14 January 2016, p. 8.

427 Huacuja ER, ¶¶ 61-62; **R-0057**, LGRA, 18 July 2016, art. 144.

428 Huacuja ER, ¶¶ 79-94.

429 [redacted]

430 Respondent's Counter Memorial, ¶ 418.

law."[431] And [redacted] cannot possibly constitute "illegally obtained evidence" under international law, as Respondent argues.[432]

156. In all the cases on which Mexico relies, evidence was excluded only where the party seeking to introduce it had obtained the evidence by illegal means. For example, in *Methanex*,[433] the tribunal excluded a category of documents after legitimate questions were raised over how Methanex had obtained them, which Methanex was unable to answer satisfactorily.[434] The tribunal ruled that because the documents were "procured by Methanex unlawfully; . . . it would be wrong to allow Methanex to introduce this documentation into these proceedings in violation of a general duty of good faith imposed by the UNCITRAL Rules and, indeed, incumbent on all who participate in international arbitration, without which it cannot operate."[435]

157. In *EDF*, the second case cited by Respondent,[436] the tribunal excluded claimant's submission of an audio recording of a conversation that was held in the witness' home without her consent because to admit it "would be contrary to the principles of good faith and fair dealing required in international arbitration."[437]

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431 **RL-0007**, *EDF (Services) Limited v. Romania* (ICSID Case No. ARB/05/13) Procedural Order No. 3, 29 August 2008, ¶ 36.

432 Respondent's Counter-Memorial, ¶ 414.

433 **CL-0074**, *Methanex Corporation v. United States of America* (UNCITRAL) Final Award on Jurisdiction and Merits, 3 August 2005, ¶ 58.

434 The documents that were excluded were the so-called "Vind documents" on the grounds that Methanex obtained the documents illegally. The Vind Documents comprised two different categories: (i) those documents collected by Methanex prior to commencement of arbitration proceedings, and (ii) those documents collected by Methanex after the proceedings were commenced in December 1999. Regarding the first category (collected before the commencement of proceedings), the tribunal found that Methanex could not produce any "satisfactory evidence as to the lawfulness of the means it employed to obtain these documents from Mr Vind and his company." The tribunal also noted that the relevant person was neither called by Methanex as a witness, nor could Methanex provide any satisfactory explanation for his absence as a material witness. **CL-0074**, *Methanex Corporation v. United States of America* (UNCITRAL) Final Award on Jurisdiction and Merits, 3 August 2005, ¶¶ 57-58.

435 **CL-0074**, *Methanex Corporation v. United States of America* (UNCITRAL) Final Award on Jurisdiction and Merits, 3 August 2005, ¶ 58.

436 Respondent's Counter-Memorial, ¶ 418.

437 **RL-0007**, *EDF (Services) Limited v. Romania* (ICSID Case No. ARB/05/13) Procedural Order No. 3, 29 August 2008, ¶ 38.

158. Again, [redacted] did not breach Mexican domestic law, [redacted], there is no showing by Respondent that Claimant obtained any evidence illegally, much less in violation of international law or "principles of good faith and fair dealing," such that exclusion of any evidence would be justified.

159. Finally, Respondent's reliance on *OOO Manolium-Procesing v. Bielorusia*[438] is misplaced, and, if anything, should serve as a warning to Mexico not to use its domestic powers to "investigate" or "conduct intelligence" to gain an advantage in this arbitration.[439] As the *OOO Manolium* tribunal cautioned:[440]

> The duty to not obtain evidence improperly requires a Respondent State to abstain from the use of special domestic powers, **for example, to investigate suspected criminal conduct, or conduct intelligence for national security purposes, to obtain evidence to defend itself in an investment arbitration**. Whilst the capacity for a foreign investor to obtain evidence from a State party through improper means is significantly reduced, the duty not to engage in improper activities applies equally to a foreign investor.

160. Respondent further asserts that [redacted]."[441] Therefore, according to Mexico, this Tribunal should not give probative value to [redacted] witness statement. Respondent's argument is not supported by the facts or the law.

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438 Respondent's Counter-Memorial, ¶ 419.

439 **RL-0008**, *OOO Manolium-Processing v. The Republic of Belarus* (PCA Case No. 2018-06) Decision on Claimant's Interim Measures Request, 7 December 2018, ¶ 160. It is also ironic that Respondent has decided to cite the *OOO Manolium* decision and completely ignored that same tribunal's determination that "parties have a duty to refrain from any behaviour which could be seen as an attempt to exert undue influence or pressure on a witness." **RL-0008**, *OOO Manolium-Processing v. The Republic of Belarus* (PCA Case No. 2018-06) Decision on Claimant's Interim Measures Request, 7 December 2018, ¶ 163. Indeed, both Respondent's indirect threats in its Counter-Memorial and the actions of its agents who threatened [redacted] testify to Respondent's breach of the duty to not unduly influence witnesses.

440 **RL-0008**, *OOO Manolium-Processing v. The Republic of Belarus* (PCA Case No. 2018-06) Decision on Claimant's Interim Measures Request, 7 December 2018, ¶ 160 (emphasis added).

441 Respondent's Counter-Memorial, ¶ 388.

161. Under international law, there is no property in a fact witness.[442] The fact that [redacted] does not mean that [redacted] barred from testifying in these proceedings to give [redacted]

162. Indeed, the emails on which Mexico relies do not even support its assertions. None of them convey privileged or confidential information related to Mexico's legal strategy. Rather, they relate solely to administrative matters. In fact, they were not addressed to [redacted] there is no evidence [redacted].

a. On 1 April 2019, [redacted][443] That same email forwards an earlier email sent by Mr. Hugo Gabriel Romero Martinez with an attachment apparently related to questions about the Don Diego Project. [redacted] and Respondent has refused to disclose that document.[444]

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442 *See* **CL-0154**, *Cambodia Power Company v. Kingdom of Cambodia* (ICSID Case No. ARB/09/18) Decision on the Claimant's Application to Exclude Mr. Lobit's Witness Statement and Derivative Evidence, 29 January 2012, ¶¶ 1-2. Here, the tribunal noted that international law governed the question of the admissibility of Mr. Lobit's evidence: "The Tribunal finds that International Law governs the question of the admissibility of Mr. Lobit's evidence in this Arbitration. In applying International Law, the Tribunal finds that questions of impediment, privilege, agency, confidentiality and fiduciary duties, that have been relied upon by CPC, are governed by Californian law. In reaching its determinations on the Claimant's application, the Tribunal considers that it may be guided, as agreed by the Parties, by the IBA Rules on the Taking of Evidence in International Commercial Arbitration. The Tribunal declines to exclude Mr. Lobit's testimony from these proceedings, and to prevent him from participating in these proceedings, on the sole basis of his or PDC's status or relationship with CPC and its legal representatives, including objections based on agency, confidentiality, and fiduciary duties." **CL-0154**, *Cambodia Power Company v. Kingdom of Cambodia* (ICSID Case No. ARB/09/18) Decision on the Claimant's Application to Exclude Mr. Lobit's Witness Statement and Derivative Evidence, 29 January 2012, ¶¶ 1-2. *See also* **CL-0161**, *Flughafen Zurich A.G. v. Republic of Venezuela* (ICSID Case No. ARB/10/19) Decision on the Disqualification of Mr. Ricover as an Expert in This Proceeding, on the Exclusion of the Ricover-Winograd Report and on the Documentary Request, 29 August 2012, ¶¶ 37-39. In this case, the tribunal dismissed a motion to exclude the respondent's expert report and preclude any further participation of the expert. Based on the facts as alleged by the parties, the tribunal found that certain information provided by the claimant to the respondent's expert, prior to his appointment in that capacity, was neither confidential nor privileged and that the expert never had effective knowledge of said information. The tribunal reserved the right to overturn its decision if the alleged facts were proven false at a later stage of the proceeding.

443 **R-0068**, Correos electrónicos del 1º de abril de 2019 intercambiados entre funcionarios de la Secretaría de Economía y SEMARNAT.

444 *See* Procedural Order No. 3, 23 April 2021, PDF pp. 42-44.

b. On 5 April 2019, [redacted].[445] No other information was conveyed in this communication.

c. On 12 April 2019, Mr. Orlando Pérez Garate forwarded an email by Claimant's counsel proposing once again to engage in talks to negotiate relative to environmental issues that SEMARNAT might have had.[446] However, Mr. Pérez Garate does not mention any position by counsel with regard to the arbitration or with respect to the litigation strategy in the email.

d. Finally, on 31 May 2019, [redacted].[447] There was no discussion of litigation strategy or anything related to the international arbitration case in the message.

163. [redacted] is also of no significance here.[448] Mexico presents no evidence [redacted] privy to case strategy, and [redacted].[449]

164. Moreover, there is plainly nothing privileged [redacted]; [redacted] and not to any later discussion of Odyssey's claim.[450]

165. Finally, Respondent argues that [redacted], this would have constituted an illegal action under Mexican law that the witnesses were bound to denounce.[451]

166. Needless to say, it is unrealistic to expect [redacted]

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445 **R-0070**, Correos electrónicos del 5 de abril de 2019 intercambiados entre la Demandada y funcionarios de la SEMARNAT.

446 **R-0069**, Correo electrónico del 12 de abril de 2019 enviado por la Demandada a la SEMARNAT.

447 **R-0071**, Correo electrónico del 31 de mayo de 2019 enviado por la Demandada a la SEMARNAT.

448 Respondent's Counter-Memorial, ¶ 390.

449 [redacted]

450 Mexico has not exhibited a single document in which [redacted]. Respondent's claim rests on Mr. Salvador Hernandez's naked assertion that [redacted] Hernandez WS, ¶ 10. However, Mr. Hernandez provides no details as to when or how these views were supposedly expressed or any corroborating documents. [redacted]

451 Respondent's Counter-Memorial, ¶ 337.

[redacted] .[452] As noted further above, Mr. Pacchiano has admitted that he possessed this power. He has also admitted that Undersecretary Garciarivas could have dismissed [redacted] .[453] In addition, at that time, any complaint against Mr. Pacchiano would not have enjoyed any guarantee of confidentiality.[454] The suggestion that [redacted] should be disbelieved because [redacted] is as untenable as it is shocking for Respondent to have even contended it.

167. The legal regime in place at the time of the First Denial in 2016, the Ley Federal de Responsabilidades Administrativas de los Servidores Públicos ("**LFRASP**"), was not structured to encourage public servants to denounce wrongdoing. Under the LFRASP, it was impossible for the whistleblowing public servant to remain anonymous.[455] This is because the "Regulations for the Attention, Investigation and Conclusion of Complaints and Denunciations," which established the system of complaints against civil servants under the LFRASP, had certain requirements that prevented it. First, the Nineteenth Regulation established that one of the base requirements to address a complaint is the name of the complainant.[456] Additionally, the Twenty-Fifth Regulation allowed for interviewing of the complainant during an investigation.[457] Moreover, under Article 8 of the LFRASP, a public servant had to denounce another public servant's conduct in writing,[458] making it easier to identify who had actually filed the complaint.

168. The LRGA governed whistle-blowing complaints by public servants by the time SEMARNAT issued its Second Denial in October 2018.[459] However, it was only in 2019, when the Internal Regulations and Proceedings for Anonymous Whistleblowers—which established

452 Herrera ER2, ¶¶ 15, 39; Huacuja ER, ¶¶ 30-32.
453 Pacchiano WS, ¶¶ 18-19.
454 Huacuja ER, ¶¶ 11, 15, 18.
455 Huacuja ER, ¶¶ 15, 18, 20.
456 Huacuja ER, ¶ 15.
457 Huacuja ER, ¶ 16.
458 Huacuja ER, ¶¶ 19-20.
459 Huacuja ER, ¶¶ 11, 21.

the Plataforma de Alertadores (Whistleblower Platform)—were issued, that the possibility of anonymous complaints became a reality.[460] This new law also grants whistleblowers and witnesses in certain types of proceedings the right to request "reasonable" protection measures.[461]

169. Thus, Mexico's assertion that "[t]he distinction between the applicable law to the actions of public officials . . . **is merely formal**, because, in substance and for the purposes of the arbitration, **both laws imply the existence of mechanisms for complaint, investigate and sanction illegal actions by public officials**"[462] does not withstand scrutiny. Anonymity was not a feature of the LFRASP regime, and whistleblower protections did not come into play until at least 2019, thus placing any public servant who could potentially report corruption within the government in an untenable position. Moreover, because the new Whistleblower Platform is restricted to particularly serious offenses by public servants, [redacted].[463]

170. In launching the new protocol to protect whistleblowers in July 2019, Ms. Irma Sandoval (Mexico's former Secretary of Public Function) recognized that, in Mexico, there is a culture of comparing "those who alert about internal corruption with informers or, as we say in Mexico, 'rats' [or] 'snitches,'"[464] and that, until this new protocol was launched, there were no "safe, concrete protections or incentives or tools for whistleblowers and for the encouragement of these important complaints."[465]

171. Finally, even if [redacted], the imposition of any sanction against Mr. Pacchiano would

460 Huacuja ER, ¶¶ 23-24.

461 Huacuja ER, ¶ 23.

462 Respondent's Counter-Memorial, ¶ 183 (emphasis added).

463 Huacuja ER, ¶¶ 25.

464 **C-0448**, H. Molina, "Función Pública ofrecerá protección a denunciantes de actos de corrupción," El Economista, 25 July 2019, p. 2 (free translation). Mexico is just now implementing a whistleblowing procedure designed to shield whistleblowers from retaliation.

465 **C-0448**, H. Molina, "Función Pública ofrecerá protección a denunciantes de actos de corrupción," El Economista, 25 July 2019, p. 2 (free translation).

have had to be approved by the President himself.[466] As confirmed by Mr. Huacuja, it would have been extremely unlikely for the President to confirm a sanction against his own political appointee.[467] Thus, [redacted].[468] It is simply not credible to now attack [redacted] thanks to a whistleblowing regime that, at the relevant time, provided no meaningful protection against reprisal.

C. None of Claimant's Experts or Witnesses Is to Receive a Contingency Fee

172. Mexico states, citing Odyssey's 10-K dated 20 March 2020,[469] that "at least two undefined 'consultants' have entered into contingency contracts **for this arbitration** in exchange for 1.5 million equity Odyssey shares . . . as well as a fixed success fee of US$700,000."[470]

173. As an initial matter, this statement is deliberately false and misleading simply based on the 10-K itself. Odyssey's 10-K clearly says that the issuance of shares to the consultants is dependent on the "Mexican[] government['s] approval and issuance of the Environmental Impact Assessment ('EIA')."[471] The same is true of the US$ 700,000 success fee, which is owed "upon the approval and issuance of the EIA."[472] Thus, it is plainly false on the face of the document that these contingency fees are dependent on the outcome of the arbitration.

174. More importantly, the consultants mentioned in Odyssey's 10-K are not experts or witnesses in this arbitration (and Mexico had no basis to assert that they are). None of Odyssey's experts and witnesses is testifying on a contingency basis.

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466 Huacuja ER, ¶ 31.

467 Huacuja ER, ¶ 31.

468 Huacuja ER, ¶¶ 31-32.

469 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020, p. 72 (internal PDF reference by Mexico, p. 69).

470 Respondent's Counter-Memorial, ¶ 425 (emphasis added).

471 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020, p. 72.

472 **C-0190**, Odyssey Marine Exploration, Inc. Form 10-K for the period ending 31 December 2019, 20 March 2020, p. 72.

IV. MERITS

A. Mexico's Conduct Has Breached the Fair and Equitable Treatment Standard of Article 1105

1. The Standard Under Article 1105

a. Claimant's Characterization of the FET Standard Is in Accordance with Customary International Law

175. The parties agree that the standard for assessing a breach of Article 1105 is encapsulated in the oft-quoted summary found in *Waste Management II*.[473]

176. Nothing in the *Waste Management II* award itself suggests that the threshold for demonstrating a breach of the standard is "extremely high," as Respondent argues.[474] Nor do most other authorities applying the standard. For instance, as the *Mondev* tribunal articulated it, "what is unfair or inequitable need not equate with the outrageous or the egregious. In particular, a State may treat foreign investment unfairly and inequitably without necessarily acting in bad faith."[475] Additionally, the *Thunderbird v. Mexico* tribunal emphasized that "[t]he content of the minimum standard should not be rigidly interpreted and it should reflect evolving international customary law."[476]

177. Under the *Waste Management II* standard, a measure breaches the customary FET standard when it is not accorded in good faith, is arbitrary, violates due process, or is non-transparent.[477] Respondent should be familiar with this principle given the decisions of the tribunals in *Metalclad*, *Tecmed*, and *Abengoa*, in which, as here, Mexico

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473 Respondent's Counter-Memorial, ¶¶ 449-451.

474 Respondent's Counter-Memorial, ¶ 449.

475 **CL-0078**, *Mondev International Ltd. v. United States* (ICSID Case No. ARB(AF)/99/2) Award, 11 October 2002, ¶ 116. This has also been confirmed by several other NAFTA tribunals: **CL-0070**, *Merrill & Ring Forestry L.P. v. Canada* (UNCITRAL) Award, 31 March 2010, ¶¶ 209-213; **CL-0076**, *Mobil Investments Canada Inc. & Murphy Oil Corporation v. Government of Canada* (ICSID Case No. ARB(AF)/07/4) Decision on Liability and on Principles of Quantum, 22 May 2012, ¶ 152.

476 **CL-0168**, *International Thunderbird Gaming Corporation v. The United Mexican States* (UNCITRAL) Arbitral Award, 26 January 2006, ¶ 194.

477 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶¶ 98, 102, 105-107.

unsuccessfully tried to use the shield of "environmental protection" as a cloak for its unlawful actions.[478]

178. Mexico first argues that this Tribunal should disregard any decisions relied on by Claimants rendered by non-NAFTA tribunals.[479] This is not a valid argument. As the Free Trade Commission's Interpretative Note of July 2001 expressly provides, the standards recalled in Article 1105 must be understood as reflecting the customary international law standard.[480] This was clearly an attempt to identify Article 1105 with a universal standard, not an attempt to isolate it as being treaty-specific. Moreover, and in any event, Respondent's position is undermined by the fact that it has cited several non-NAFTA Chapter 11 tribunals in the MST section of its Counter-Memorial.[481]

179. Next, Mexico attempts to segregate each of the various legal theories and principles used by tribunals to provide case-specific context to the minimum standard of treatment (*e.g.* good faith, arbitrariness, due process, etc.), implying that each should be rejected as a suitable cause of action. But these concepts are not causes of action; they are merely lenses, each grounded in canonical sources of public international law, that are available to assist tribunals in construing what "fair and equitable treatment" means in any given context.[482] It is also submitted that it is manifest that, regardless of which lens is chosen here, the same picture is revealed: treatment that was neither fair nor equitable as adjudged by international standards.

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478 **CL-0071**, *Metalclad Corporation v. The United Mexican States* (ICSID Case No ARB(AF)/97/1) Award, 30 August 2000, ¶ 93; **CL-0112**, *Tecnicas Medioambientales Tecmed S.A. v. The United Mexican States* (ICSID Case No. ARB(AF)/00/2) Award, 29 May 2003, ¶ 132; **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶¶ 650-652.

479 Respondent's Counter-Memorial, ¶ 487.

480 **CL-0082**, North American Free Trade Agreement, Notes of Interpretation of Certain Chapter 11 Provisions, NAFTA Free Trade Commission, 31 July 2001, p. 2.

481 Respondent's Counter-Memorial, ¶¶ 473, fn. 551, 477, fn. 562, 499, 501, 508, 534-539.

482 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 98; **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 263-264.

180. For example, Mexico argues that "the Claimant's assertion that lack of good faith alone could establish an FTE violation is plainly incorrect."[483] This is both a mischaracterization of Claimant's position and a direct repudiation of the *Waste Management II* standard.

181. Mexico's argument that good faith, in and of itself, is not a substantive rule of international law[484] misses the point. Good faith lies at the heart of the minimum standard of treatment in accordance with customary international law. As the *Abengoa* tribunal held: "the minimum standard of treatment in accordance with customary international law is an expression and a constitutive part of the principle of good faith."[485] This is nothing more than what the *Waste Management II* tribunal recognized in holding that "[a] basic obligation of the [host] State under [the minimum standard of treatment] is to act in good faith and form, and not deliberately to set out to destroy or frustrate the investment by improper means."[486]

182. This holding has also been confirmed by several other tribunals.[487] For instance, the *TECO Guatemala* tribunal, applying the customary MST standard, stated:[488]

> [T]he minimum standard is part and parcel of the international principle of good faith . . . . **[A] lack of good faith on the part of the State or of one of its organs should be taken into account in order to assess whether the minimum standard was breached**.

183. Additionally, investment tribunals have found that the principle of good faith provides a solid foundation for construing the minimum standard of treatment from the standpoint

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483 Respondent's Counter-Memorial, ¶ 475.

484 Respondent's Counter-Memorial, ¶¶ 471-475.

485 **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶ 643; *see also* **CL-0113**, *TECO Guatemala Holdings LLC v. The Republic of Guatemala* (ICSID Case No. ARB/10/17) Award, 19 December 2013, ¶ 456.

486 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 138.

487 **RL-0032**, *Sempra Energy International v. Argentine Republic* (ICSID Case No ARB/02/16) Award, 28 September 2007, ¶ 298 (annulled on other grounds); **CL-0173**, *Les Laboratoires Servier, S.A.S., Biofarma, S.A.S., Arts et Techniques du Progrès S.A.S. v. Republic of Poland* (PCA) Award, 14 February 2012, ¶ 568; **CL-0176**, *Marion and Reinhard Unglaube v. Republic of Costa Rica* (ICSID Case Nos. ARB/08/1 and ARB/09/20) Award, 16 May 2012, ¶ 247.

488 **CL-0113**, *TECO Guatemala Holdings LLC v. The Republic of Guatemala* (ICSID Case No. ARB/10/17) Award, 19 December 2013, ¶ 456 (emphasis added).

of the public international law theory of abuse of rights.[489] In short, state conduct that involves exercising "a right for a purpose that is different from that for which that right was created" is wrongful as a matter of customary international law.[490] Relatedly, "the termination of the investment for reasons other than the one put forth by the government" can be considered a violation of FET under the customary standard.[491]

184. For the avoidance of any doubt, claimants do not need to show bad faith in state conduct to establish that MST was breached,[492] but state conduct not taken in good faith that harms an investor is always a breach.[493]

185. Mexico similarly argues that no NAFTA tribunal, other than *Cargill*, has ever found a breach of Article 1105 based on evidence of arbitrariness alone. This proposition is also both incorrect and irrelevant.

186. Mexico conveniently leaves out the *Bilcon* tribunal's finding that Canada's arbitrary conduct in denying an environmental permit for a reason unrelated to the merits of Bilcon's project constituted a breach of Article 1105. In the words of that tribunal:[494]

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489 **CL-0162**, *Frontier Petroleum Services Ltd v. The Czech Republic* (UNCITRAL) Final Award, 12 November 2000, ¶ 300; *see also* **CL-0163**, G. Fitzmaurice, "The Law and Procedure of the International Court of Justice, 1951-54: General Principles and Sources of Law" (1953) 30 Brit. YB. Int'l L. I at 53: "There is little legal content in the obligation to exercise a right in good faith unless failure to do so would, in general, constitute an abuse of rights."

490 **CL-0104**, *Saipem S.p.A. v. The People's Republic of Bangladesh* (ICSID Case No ARB/05/7) Award, 30 June 2009, ¶ 160.

491 **CL-0162**, *Frontier Petroleum Services Ltd v. Czech Republic* (UNCITRAL) Final Award, 12 November 2000, ¶ 300.

492 **CL-0078**, *Mondev International Ltd. v. United States* (ICSID Case No. ARB(AF)/99/2) Award, 11 October 2002, ¶ 116. This has also been confirmed by several other NAFTA tribunals: **CL-0070**, *Merrill & Ring Forestry L.P. v. Canada* (UNCITRAL) Award, 31 March 2010, ¶¶ 209-213; **CL-0076**, *Mobil Investments Canada Inc. & Murphy Oil Corporation v. Government of Canada* (ICSID Case No. ARB(AF)/07/4) Decision on Liability and on Principles of Quantum, 22 May 2012, ¶ 152.

493 **CL-0173**, *Les Laboratoires Servier, S.A.S., Biofarma, S.A.S., Arts et Techniques du Progrès S.A.S. v. Republic of Poland* (PCA) Award, 14 February 2012, ¶ 568; **CL-0176**, *Marion & Reinhard Unglaube v. Republic of Costa Rica* (ICSID Case Nos. ARB/08/1 and ARB/09/20) Award, 16 May 2012, ¶ 247.

494 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 591; **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 98. *See also*: **CL-0005**, *ADF Group Inc. v. United States of America* (ICSID Case No. ARB(AF)/00/1) Award, 9 January 2003, ¶¶ 157, 162-168; **CL-0113**, *TECO Guatemala Holdings LLC v. The Republic of Guatemala* (ICSID Case No. ARB/10/17) Award, 19 December 2013, ¶ 455 (adopting *Waste*

> The *Waste Management* test mentions arbitrariness. The Tribunal finds that the conduct of the joint review was arbitrary. The JRP effectively created, without legal authority or fair notice to Bilcon, a new standard of assessment rather than fully carrying out the mandate defined by the applicable law.

187. Other NAFTA tribunals have likewise found that a state's application of domestic regulations to advance objectives that are not related to the objective for which the legal instrument was created constitutes a breach of the Article 1105 minimum standard of treatment.[495]

188. Respondent tries to discount and marginalize cases wherein non-NAFTA tribunals found arbitrary conduct, asserting that "citations to non-NAFTA awards must be regarded with a degree of skepticism."[496] It also argues that non-NAFTA tribunals have applied a lower threshold to evaluate arbitrariness than NAFTA tribunals.[497] Respondent bases this assertion on a single article by a graduate student,[498] which appears to analyze the approach taken by other tribunals dealing with an *unconstrained* FET standard, rather than focusing on whether the reasoning behind them could be useful in applying an FET standard expressly anchored to the customary MST standard.

189. Again, Article 1105 embraces the minimum standard of treatment under customary law. Thus, any tribunal interpreting arbitrary treatment in the context of the minimum standard of treatment under customary law is at least potentially relevant, as Respondent implicitly acknowledges by relying on the ICJ's *ELSI* decision defining "arbitrariness."[499]

190. A decision taken for political reasons and cloaked in the exercise of a state's regulatory powers is the epitome of arbitrary treatment and thus constitutes a breach of the MST

Management standard in principal part); **CL-0095**, *Railroad Development Corporation (RDC) v. Republic of Guatemala* (ICSID Case No. ARB/07/23) Award, 29 June 2012, ¶ 219.

495 **CL-0127**, *Mr. Joshua Dean Nelson v. The United Mexican States* (ICSID Case No. UNCT/17/1) Final Award, 5 June 2020, ¶ 325; **CL-0089**, *Pope & Talbot Inc v. The Government of Canada* (UNCITRAL) Interim Award, 26 June 2000, ¶ 99.

496 Respondent's Counter-Memorial, ¶ 487.

497 Respondent's Counter-Memorial, ¶ 487.

498 **RL-0034**, J. Stone, "Arbitrariness, The Fair and Equitable Treatment Standard and the International Law of Investment" (2012), p. 103.

499 Respondent's Counter-Memorial, ¶¶ 478-479.

standard.[500] As explained by Claimant in its Memorial, a long line of tribunals (both NAFTA and non-NAFTA) have rendered reasoned awards supporting this proposition.[501]

191. Investment tribunals have also consistently held that administrative decisions, including those made within the ambit of permitting, must comply with due process of law.[502] As the *Glencore v. Colombia* tribunal explained:[503]

> The rule of law requires that in judicial proceedings (administered by a court of law or a tribunal) and in administrative proceedings (administered by the public administration) due process be respected: the adjudicator, be it a judge, tribunal member, or administrative authority, must give each party a fair opportunity to present its case and to marshal appropriate evidence, and then **must assess the submissions and the evidence in a reasoned, even-handed, and unbiased decision**.

192. Mexico argues that Article 1105's administrative due process standard is high.[504] However, as Professor Patrick Dumberry, whose work Respondent cites extensively in its Counter-Memorial,[505] notes: "NAFTA case law shows that tribunals have in fact been quite demanding regarding the level of conduct required by the host State in order for it to respect its due process obligation."[506] Professor Dumberry continues by providing a

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500 Indeed, this would be the kind of conduct which "does not follow the law, justice or reason but rather is based on caprice." **CL-0031**, *Cervin Investissements S.A. and Rhone Investissements S.A. v. Republic of Costa Rica* (ICSID Case No. ARB/13/2) Award, 7 March 2017, ¶ 523.

501 **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶ 189; **CL-0112**, *Tecnicas Medioambientales Tecmed S.A. v. The United Mexican States* (ICSID Case No. ARB(AF)/00/2) Award, 29 May 2003, ¶ 127; **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶¶ 650-652; **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶¶ 598, 600; **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014, ¶¶ 581, 587-588; **CL-0031**, *Cervin Investissements S.A. and Rhone Investissements S.A. v. Republic of Costa Rica* (ICSID Case No. ARB/13/2) Award, 7 March 2017, ¶¶ 523-527 (analyzing the MST standard); *see also* **CL-0014**, *Azurix Corp. v. The Argentine Republic* (ICSID Case No. ARB/01/12) Award, 14 July 2006, ¶ 392.

502 **CL-0031**, *Cervin Investissements S.A. and Rhone Investissements S.A. v. Republic of Costa Rica* (ICSID Case No. ARB/13/2) Award, 7 March 2017, ¶¶ 573, 653-656.

503 **CL-0165**, *Glencore International A.G. and C.I. Prodeco, S.A. v. Republic of Colombia* (ICSID Case No. ARB/16/6) Award, 27 August 2019, ¶ 1318 (emphasis added).

504 Respondent's Counter-Memorial, ¶¶ 489-490.

505 Respondent's Counter-Memorial, ¶¶ 472, 474, 478-479, 482, 484-485, 508, 510.

506 **RL-0022**, P. Dumberry, "The Fair and Equitable Treatment Standard: A Guide to NAFTA Case Law on Article 1105" (2013), p. 259.

list a series of cases where, as in this case, the claimant had not been given administrative due process, including:

a. "When an investor is denied a permit based on reasons that are unrelated to specific existing requirements for issuing that permit (*Metalclad*)";[507] and

b. "When an administrative order is not 'adequately detailed and reasoned', such as, for instance, in cases where an order does not review the evidence presented by a party at a hearing or where the order does not discuss the legal grounds on which that administrative body has based its decision (*Thunderbird*)."[508]

b. Respondent's Reliance on *Vento v. Mexico* Is Misplaced

193. Mexico asserts that this Tribunal should dismiss Claimant's claims by applying a rationale drawn from the recent award in *Vento v. Mexico*, where the tribunal found that an administrative decision taken due to "secret marching orders" could not have been a breach of MST.[509]

194. Mexico introduces its reliance on Vento by asserting that "the measure claimed by [Odyssey] is, basically, the denial of environmental authorization."[510] But that mischaracterizes Odyssey's claim. It is the reason for the denial that matters. Odyssey asserts that the MIA was denied not on the basis of legitimate environmental considerations, but instead on the basis of the political motivations and personal conflicts of Secretary Pacchiano [redacted]

195. The minimum standard of treatment is breached if these facts are proved, and there is nothing in *Vento* to suggest otherwise. Indeed, the parties in *Vento,* and the tribunal,

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507 **RL-0022**, P. Dumberry, "The Fair and Equitable Treatment Standard: A Guide to NAFTA Case Law on Article 1105" (2013), p. 259; **CL-0071**, *Metalclad Corporation v. The United Mexican States* (ICSID Case No ARB(AF)/97/1) Award, 30 August 2000, ¶¶ 7, 76.

508 **RL-0022**, P. Dumberry, "The Fair and Equitable Treatment Standard: A Guide to NAFTA Case Law on Article 1105" (2013), pp. 259-260; **CL-0168**, *International Thunderbird Gaming Corporation v. The United Mexican States* (UNCITRAL) Arbitral Award, 26 January 2006, ¶¶ 164-165.

509 Respondent's Counter-Memorial, ¶¶ 455-457.

510 Respondent's Counter-Memorial, ¶ 455.

endorsed the minimum standard of treatment as formulated in *Waste Management II.*[511] Secretary Pacchiano's conduct falls squarely within that description.

196. Mexico's contention that this Tribunal is somehow bound by the *Vento* tribunal's factual findings related to an entirely different accusation of harm caused by compliance with "secret marching orders" is contrary to basic principles of practice and common sense. It should not need to be said that each tribunal is responsible for its own findings of fact, and they turn on the particular circumstances of each case.

197. Further, Respondent's claim that "[t]he parallelism that emerges between this case [*Vento*] and the present is significant"[512] is manifestly incorrect. The material factual underpinnings of the decision taken in the *Vento* case are entirely different from this case:[513]

a. *Vento* concerned tariffs imposed on imports into Mexico of motorcycles made in the United States which had been assembled from parts made in China. The Mexican customs administration concluded that Vento's motorcycles did not meet the NAFTA rules of origin, and that decision was determined by the Mexican courts to be legally correct.[514]

b. Despite the legality of that determination, Vento asserted that Mexican tax officials conducting origin verification acted under express "marching orders" to "halt and reverse Vento's expansion into Mexico's motorcycle market."[515] This was rejected.[516] Four officials provided witness statements on behalf of Vento. Two of those officials did not testify that they had been under "marching orders," one was not involved in the relevant audit and had no personal involvement in the facts of the case, and the testimony of the fourth senior official was rejected as "simply not credible" because he could not identify the official who had given any such order, nor explain the circumstances in which the order was given, and

511 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶ 276.

512 Respondent's Counter-Memorial, ¶ 456.

513 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶¶ 302-310.

514 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶ 322.

515 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶¶ 270, 302.

516 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶¶ 302-310.

because he was the "official who was ultimately responsible for ensuring the legality" of the determinations made.[517]

198. By contrast, in this case, there is no doubt as to who was responsible for the order to deny the MIA and the circumstances in which the order was given: [redacted]. [518] That evidence is corroborated by documentary evidence.[519]

199. Further, [redacted] as explained by Claimant and its experts in this Reply.[520] This legal responsibility expressly rested with Mr. Pacchiano as Secretary of SEMARNAT and Ms. Garciarivas as Undersecretary of SEMARNAT.[521]

200. For all these reasons, Respondent's attempts to compare the case at bar to the *Vento* case are unavailing.

c. Respect for Investors' Reasonable Expectations Can Be a Component of the MST Standard

201. Respondent has mischaracterized Claimant's legal and factual argument with regards to reasonable expectations.

202. It is not Claimant's position that reasonable expectations constitute a standalone standard or cause of action within the MST. Rather, Claimant contends, consistently with what other NAFTA tribunals have held, that an investor's legitimate expectations are a

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517 **RL-0020**, *Vento Motorcycles, Inc. v. United Mexican States* (ICSID Case No. ARB(AF)/17/3) Award, 6 July 2020, ¶ 290.

518 [redacted]

519 *See supra*, ¶ 88.

520 *See supra*, Section II.C.1.

521 Herrera ER2, ¶¶ 20-24, 26-29, 34, 36-39, 43-44.

"factor that may be part of an overall analysis of whether treatment has breached the minimum standard of fairness."[522]

203. Mexico claims that Odyssey was not given any express assurances that its MIA would be approved, and in any case, such expectations would not have been objectively reasonable. This proposition is equally wrong.

204. First, although Odyssey could not have an expectation that the Project would be approved, it did have an expectation that Mexico would follow its own laws and evaluate the MIA based on its merits. These expectations are objectively grounded in the rule of law and administrative due process.[523] Odyssey was similarly entitled to hold the reasonable expectation that the MIA process would not be subverted by Mr. Pacchiano's political whims. These eminently reasonable expectations were dashed when Mr. Pacchiano dictated a different result than would have accrued had the process been conducted in a truly fair and equitable manner. As such, Respondent breached the MST recalled in Article 1105 of NAFTA.

205. Second, Odyssey was given express assurances that Mr. Pacchiano would approve the Project if it was withdrawn and re-submitted with the required letters of support, as explained in Dr. Lozano's witness statement.[524] This is also supported by contemporaneous evidence, including an email exchange between Mr. Stemm and Mr. Ancira's secretary confirming that Mr. Pacchiano requested the letters.[525]

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522 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 282.

523 **CL-0121**, *Waste Management, Inc. v. United Mexican States II* (ICSID Case No. ARB(AF)/00/3) Award, 30 April 2004, ¶ 98; **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶ 134; **CL-0168**, *International Thunderbird Gaming Corporation v. The United Mexican States* (UNCITRAL) Award, 26 January 2006, ¶ 200.

524 Lozano WS1, ¶ 42.

525 **C-0389**, Email chain between G. Stemm and R. Jaime Barrera re Question for Alonso, 21 October 2015, pp. 1-2.

2. Mexico's Conduct Has Breached the MST/FET Standard Under Article 1105

206. Applying the correct standard, Claimant's Memorial establishes Mexico's breach of Article 1105. Specifically, Claimant's evidence establishes that Mexico denied the MIA not based on Article 35 of the LGEEPA, as it purported to do, but instead on Secretary Pacchiano's political motivations and personal conflicts.[526]

207. As noted above, rather than confront that evidence on the merits, Mexico: (i) ignores altogether the scientific evidence establishing that the decision could not have been based on legitimate environmental considerations given the objective lack of environmental impact; [redacted] and (iii) sidesteps the damning evidence of Mr. Pacchiano's political interference with the legal argument—absurd on its face and contradicted by admissions made elsewhere in the Counter-Memorial[527]—that Mr. Pacchiano (the Secretary) lacked the authority to impose his will on decisions issued by the Secretariat he controlled.

208. As already established above:

a. Article 35 of LGEEPA, the statute pursuant to which Mexico purportedly denied the MIA, permits denial of a project only where the project would impact a species as a whole;[528]

b. The scientific evidence presented by Claimant, which Mexico does not challenge, and SEMARNAT's own study[529] relating to the impact of fisheries, establishes that

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526 [redacted] **C-0405**, Email from D. De Narvaez to J. Longley re Richard, 22 March 2016; **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2. In the latter exchange, Mr. De Narváez writes: "Thirdly the negative resolution for our MIA was of political nature and not technical, [redacted] The recent decision to deny consent came from Secretary Pacchiano due, it would appear, to a) his unstable political situation resulting from the approval of a controversial real estate project in Quintana Roo state and b) according to Mauricio, 'Alonso's outbursts with Pacchiano', whatever that means."

527 Respondent's Counter-Memorial, ¶ 178.

528 *See supra*, ¶¶ 19-30.

529 *See supra*, ¶¶ 31-43.

the Project would not have affected the *Carreta carreta* or any other species as a whole;[530] and

c. The Denials therefore could not have been based on a legitimate application of environmental law.[531]

209. Indeed, the evidence demonstrates that the MIA was denied for purely political reasons. As Mr. De Narvaez noted in a contemporaneous email: "the negative resolution for our MIA was of political nature and not technical, [redacted]"[532]

210. These facts establish a breach of the minimum standard of treatment under customary international law, and thus a breach of Article 1105, as set forth in Claimant's Memorial.[533]

211. The fact that this was a predetermined denial which did not rely on scientific arguments is also evident by the way SEMARNAT treated ExO's evidence showing that the Project would not affect *Caretta caretta* turtles in the framework of the administrative review petition before Undersecretary Garcíarivas. This included:[534]

a. The discriminatory refusal to accept a detailed scientific report by Dr. Richard Newell and Dr. Doug Clarke because they were foreigners; and

b. The determination that SEMARNAT could not certify that Mr. John Opperman was a legal representative for Odyssey because there was a discrepancy between his signature name and the name listed on his passport, as well as the number of authors.

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530 *See supra*, ¶¶ 31-63.

531 *See supra*, ¶¶ 31-87.

532 **C-0416**, Email from D. De Narvaez to R. Goodden, et al., re Oceanica Internal Report, 10 August 2016, p. 2.

533 *See* Claimant's Memorial, ¶¶ 248-286. Additionally, Claimant has shown, by relying on *Tecmed v. Mexico*, *Abengoa v. Mexico*, *Bilcon v. Canada,* and *Cargill v. Mexico*, that supplanting the scientific views of the technical civil servants of SEMARNAT for the political appreciation of Secretary Pacchiano constitutes a breach of the MST standard under Article 1105 of NAFTA. *See* Claimant's Memorial, ¶¶ 287-294.

534 See *supra* Facts Section D, ¶¶ 120-121; *see also* **C-0170**, TFJA Ruling, 21 March 2018, pp. 201-203, 208.

212. These off-the-shelf pretexts were called out by the TFJA in its 2018 ruling when the tribunal found that SEMARNAT's dismissal of ExO's evidence was illegal and a breach of administrative due process.[535]

3. Respondent Cannot Rely on Its Environmental Regulatory Powers as a Shield to Protect Itself from NAFTA Chapter 11 Breaches

213. The Counter-Memorial is rife with protests that this Tribunal has no authority to "second-guess" the DGIRA's determination,[536] notwithstanding the fact that nobody has asked the Tribunal to do so. Claimant has instead asked the Tribunal to determine that the manner in which it was treated in relation to SEMARNAT's determination was inconsistent with Mexico's NAFTA obligations. This is a far cry from contemplating overturning SEMARNAT's decision.

a. Under International Law, States Are Required to Exercise Their Regulatory Powers in Good Faith, Non-Arbitrarily, and for the Purposes That They Were Created

214. Respondent relies on Article 1114(1) of NAFTA to justify its position that the Tribunal is not permitted to scrutinize ExO's MIA decision, but the language of the provision says no such thing:[537]

> Nothing in this Chapter shall be construed to prevent a Party from adopting, maintaining or enforcing any **measure otherwise consistent with this Chapter** that it considers appropriate to ensure that investment activity in its territory is undertaken in a manner sensitive to environmental concerns.

215. Article 1114 thus in no way relieves NAFTA parties of the obligation to ensure that environmental regulatory decisions are adopted and/or maintained in a manner consistent with their NAFTA obligations. For example, in rejecting the Attorney General

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535 *See supra* Facts Section D, ¶¶ 120-121.

536 Respondent's Counter-Memorial, ¶¶ 452, 519, 522, 560-561.

537 **CL-0081**, NAFTA, art. 1114 (emphasis added).

of Canada's application to set aside the *SD Myers v. Canada* award, the Federal Court of Canada stated:[538]

> Article 1114 of NAFTA allows Canada to adopt a legitimate environmental measure without regard to Chapter 11. However, the Tribunal found that the Canadian law banning exports of PCBs ***was not a measure for a legitimate environmental purpose, but was for the purpose of protecting Canadian industry from U.S. competition***. Article 1114 is not in issue.

216. Within the context of environmental regulation, it is also worth repeating the *Bilcon* tribunal's analysis of environmental police powers, which is particularly pertinent to these proceedings:[539]

> Environmental regulations, including assessments, will inevitably be of great relevance for many kinds of major investments in modern times. The mere fact that environmental regulation is involved does not make investor protection inapplicable. Were such an approach to be adopted—and States Parties could have chosen to do so—there would be a very major gap in the scope of the protection given to investors.

217. Other tribunals have also emphasized that environmental protection does not provide a *carte blanche* for exercises of police power inconsistent with investment treaty obligations.[540] Indeed, even as a matter of customary international law, states must

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538 **RL-0015**, *The Attorney General of Canada and S.D. Myers, Inc. and United Mexican States* (UNCITRAL) Reasons for Order, 13 January 2004, ¶ 30 (emphasis added).

539 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 597.

540 *Gold Reserve v. Venezuela* "acknowledge[d] that a State has a responsibility to preserve the environment and protect local populations living in the area where mining activities are conducted," but emphasized that "this responsibility does not exempt a State from complying with its commitments to international investors by searching ways and means to satisfy in a balanced way both conditions." **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/09/1) Award, 22 September 2014, ¶ 595. *ADC v. Hungary* noted that, when a state enters into a BIT, "it becomes bound by it and the investment-protection obligations it undertook therein must be honoured rather than be ignored by a later argument of the State's right to regulate." **CL-0003**, *ADC Affiliate Limited & ADC Management Limited v. Republic of Hungary* (ICSID Case No. ARB/03/16) Award, 2 October 2006, ¶ 423. *See also* **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶¶ 583-584 (observing that while it is not for investment treaty tribunals to second-guess reasons put forward for a public administration's decisions, deference to policy-makers "cannot be unlimited," otherwise treaty protections would be rendered "nugatory," and citing **CL-0176**, *Marion & Reinhard*

exercise all regulatory powers consistent with the general international law principles of due process and good faith.[541] To determine whether the measure has been taken in good faith, tribunals have tended to look at the "nature, purpose and character of the measure."[542] The fact that a measure is related to the environment is relevant, but it does not override the state's treaty obligations, including, importantly, to exercise good faith and follow due process. A state cannot use the recourse to "police powers" as a pretext to escape treaty liability.[543]

218. Tribunals have consistently held that actions taken by the state are not protected from scrutiny simply because the state claims they are an exercise of police powers.[544] In the words of the *TECO v. Guatemala* tribunal:[545]

> [A]lthough the role of an international tribunal is not to second-guess or to review decisions that have been made genuinely and in good faith by a sovereign in the normal exercise of its powers, **it is up to an international arbitral tribunal to sanction decisions that amount to an abuse of power, are arbitrary, or are taken in manifest disregard of the applicable legal rules and in breach of due process in regulatory matters**.

Unglaube v. Republic of Costa Rica (ICSID Case Nos. ARB/08/1 and ARB/09/20) Award, 16 May 2012, ¶ 247 (noting the same).

541 **CL-0173**, *Les Laboratoires Servier, S.A.S., Biofarma, S.A.S., Arts et Techniques du Progrès S.A.S. v. Republic of Poland* (PCA) Award, 14 February 2012, ¶ 568; **CL-0176**, *Marion & Reinhard Unglaube v. Republic of Costa Rica* (ICSID Case Nos. ARB/08/1 and ARB/09/20) Award, 16 May 2012, ¶ 247; **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶¶ 583-585.

542 **CL-0194**, United Nations Conference on Trade and Development (UNCTAD): Expropriation, UNCTAD Series on Issues in International Investment Agreements II (2012), pp. 76-78.

543 **CL-0170**, J.R. Marlles, "Public Purpose, Private Losses: Regulatory Expropriation and Environmental Regulation in International Investment Law" (2006-2007), p. 310.

544 **CL-0173**, *Les Laboratoires Servier, S.A.S., Biofarma, S.A.S., Arts et Techniques du Progrès S.A.S. v. Republic of Poland* (PCA) Award, 14 February 2012, ¶ 568; **CL-0176**, *Marion & Reinhard Unglaube v. Republic of Costa Rica* (ICSID Case Nos. ARB/08/1 and ARB/09/20) Award, 16 May 2012, ¶ 247; **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶¶ 583-585.

545 **CL-0113**, *TECO Guatemala Holdings LLC v. The Republic of Guatemala* (ICSID Case No. ARB/10/17) Award, 19 December 2013, ¶ 493 (emphasis added).

219. This was also the rationale of the *SD Myers* NAFTA Chapter 11 tribunal when finding that Canada had used purported environmental policy considerations to cloak protectionist intent.[546] As the that tribunal found:[547]

> Insofar as intent is concerned, the documentary record as a whole clearly indicates that the Interim Order and the Final Order were intended primarily to protect the Canadian PCB disposal industry from U.S. competition. Canada produced no convincing witness testimony to rebut the thrust of the documentary evidence. The Tribunal finds that there was no legitimate environmental reason for introducing the ban.

220. Respondent's reliance on *Chemtura* is inapposite. In *Chemtura*, claimants argued that Canada's Pest Management Regulatory Agency had carried out a flawed scientific process in concluding that lindane was a risk to human health.[548] This, according to Chemtura, constituted a breach of Article 1105.[549] In dismissing the claim, that tribunal expressly observed: "the evidence on the record does not show bad faith or disingenuous conduct on the part of Canada."[550] Clearly, the findings in *Chemtura* contrast with this case, where a political appointee ordered the denial of a project for non-scientific reasons and specifically [redacted][551]

221. Finally, as Claimant pointed out in its Memorial,[552] Mexico has pressed this argument before, to no avail. In each of the *Metalclad*, *Tecmed*, and *Abengoa* cases, tribunals rejected Mexico's attempts to justify political actions by invoking public authority to protect the environment.[553]

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546 **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 194-195, 268.

547 **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 194-195.

548 **CL-0033**, *Chemtura Corporation v. Government of Canada* (UNCITRAL) Award, 2 August 2010, ¶¶ 93, 125-128.

549 **CL-0033**, *Chemtura Corporation v. Government of Canada* (UNCITRAL) Award, 2 August 2010, ¶¶ 124-130.

550 **CL-0033**, *Chemtura Corporation v. Government of Canada* (UNCITRAL) Award, 2 August 2010, ¶ 138.

551 [redacted]

552 Claimant's Memorial, ¶¶ 240, 245.

553 **CL-0071**, *Metalclad Corporation v. The United Mexican States* (ICSID Case No. ARB(AF)/97/1) Award, 30 August 2000, ¶ 99; **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶¶ 642, 650; **CL-0112**, *Tecnicas Medioambientales Tecmed, S.A. v. The United Mexican States* (ICSID Case No. ARB(AF)/00/2) Award, 29 May 2003, ¶¶ 97, 121, 124-125.

222. Claimant submits that Mexico has failed to distinguish *Tecmed* and *Abengoa* from Odyssey's case. Arguing in a conclusory fashion, Respondent claims that "Don Diego does not resemble *Tecmed v. Mexico*,"[554] but fails to explain why. In fact, the similarities between these cases are plain. Like this case, the *Tecmed* tribunal was faced with the denial of an environmental permit for political reasons, which it determined was a breach of the respondent's obligation to provide fair and equitable treatment for investors.[555]

223. Respondent further argues that *Abengoa* cannot be compared to Odyssey's case because the latter "was an extremely premature project compared to the Abengoa plant."[556] But this purported difference has no bearing on whether the Mexican government's conduct was lawful or motivated by non-environmental purposes. Indeed, in *Abengoa*, the tribunal considered it relevant that "the political group headed by Mr. Lozano carried out its two electoral campaigns promising the population that the Plant would be closed. Obviously, after their election, said group pursued this objective for reasons that the Arbitral Tribunal finds totally disconnected from any legitimate consideration regarding the environment, public health or the respect of legality."[557]

224. Along the same lines, Claimant is not asking this Tribunal to second-guess good faith, science-based decision-making by a specialized Mexican agency. Rather, it is asking the Tribunal to condemn the abuse of Mexican state powers for personal political gain, which had the effect of rendering Claimant's investment valueless.

b. Mexico Has Not Exercised Its Regulatory Powers to Protect the Environment in Good Faith

225. As explained in Claimant's Memorial, the Project's alleged potential impact on *Caretta caretta* turtles merely served as a pretext.[558] The facts demonstrate that Mexico did not

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554 Respondent's Counter-Memorial, ¶ 499.

555 **CL-0112**, *Tecnicas Medioambientales Tecmed S.A. v. The United Mexican States* (ICSID Case No. ARB(AF)/00/2) Award, 29 May 2003, ¶¶ 152-174.

556 Respondent's Counter-Memorial, ¶ 500.

557 **CL-0002**, *Abengoa, S.A. y COFIDES, S.A. v. United Mexican States* (ICSID Case No. ARB(AF)/09/2) Award, 18 April 2013, ¶ 650.

558 Claimant's Memorial, ¶¶ 149, 248, 251-253, 268.

exercise its regulatory powers to protect the environment in good faith in connection with its evaluation of the Project.

226. First, Respondent's position that Article 35(III)(b) of LGEEPA permits the denial of a project when it affects a single specimen or individual of the population of a protected species is manifestly wrong.[559] Further, it contradicts the practices SEMARNAT had consistently applied until and after the 2016 Denial.[560]

227. Second, neither the 2016 nor the 2018 Denial included consideration of SEMARNAT's study specifically modelling the level of fishing bycatch-induced *Caretta caretta* mortality required to actually risk reducing the *Caretta caretta* population over the coming century.[561] That study was plainly highly relevant to the assessment of whether or not any other human activity, including the Project, might impact *Caretta caretta* as a species. As noted above, SEMARNAT concluded that the population would likely remain stable over the next 100 years so long as mortality rates were kept below 200 individuals per year. Secretary Pacchiano himself would even sign a decree adopting this analysis.[562] Yet SEMARNAT did not consider nor reference its own study when denying the MIA.

228. Third, the "scientific" reasons SEMARNAT articulated as to why the Project would affect turtles are manifestly wrong.[563] For example, in both Denials, SEMARNAT justifies its conclusion that *Caretta caretta* will be impacted as a species on the basis of patently false density figures that were grossly inflated by approximately 100 times as part of creating a pretext to justify denying the MIA.[564] Mexico continues to rely on those figures without qualification in its Counter-Memorial,[565] despite accepting in the ongoing TFJA proceedings that they are wrong.[566]

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559 *See supra*, ¶¶ 19-30.

560 *See supra*, ¶¶ 25-26.

561 *See supra*, ¶¶ 31-43.

562 *See supra*, ¶ 38.

563 Claimant's Memorial, ¶¶ 152-154, 159, 166, 260, 270-275, and Annex B to Claimant's Memorial, ¶¶ 8-13; *see also supra*, ¶¶ 31-32.

564 *See*, *for example*, Claimant's Memorial, ¶¶ 268, 272-273, 275, as well as Annex B to Claimant's Memorial, ¶ 11.

565 Respondent's Counter-Memorial, ¶ 323.

566 *See supra*, ¶¶ 60-61.

229. Fourth, SEMARNAT's continued failure to correct this manifest error and determine the MIA based on the correct information undermines the credibility of the reasoning upon which the denial of the MIA was purportedly based. This "error" was first articulated in the 2016 Denial and was restated in the 2018 Denial, despite Odyssey's having repeatedly pointing out the correct density,[567] for example, in ExO's Technical and Scientific Report supporting a request for a review by SEMARNAT of the 2016 Denial,[568] as well as in submissions to the TFJA.[569] This demonstrates that the outcome was pre-determined and unfair, and the denial of the MIA was not grounded in scientific evidence.

230. Fifth, despite its alleged focus on sea turtles, the 2018 Denial almost wholly ignores the package of mitigation measures advanced by Odyssey to protect turtles, as described in EXO's MIA[570] and Dr. Clarke's unchallenged Witness Statement.[571] It is also striking that none of the comparator dredging projects in shallow waters identified in Section 3 of Mr. Pliego's Second Expert Report deployed such measures, nor did SEMARNAT ask their sponsors to do so.[572] Mexico denies that these waters contained sea turtles, but that suggestion is untenable, as explained by Mr. Pliego.[573]

231. Sixth, Mexico has not produced any contemporaneous evidence—documentary or testimonial—to support the purported integrity of the evaluation and determination of the MIA. Conversely, [redacted].[574]

567 *For example*, **C-0019**, Amendment to the annulment petition of the 2016 Denial, 6 June 2017, pp. 19-21; **C-0151**, Technical and Scientific Report, 9 June 2016, pp. 15-26; and **C-0021**, Closing arguments for annulment petition of the 2016 Denial, 7 September 2017, pp. 9-12, 28, 32.

568 **C-0151**, Technical and Scientific Report, 9 June 2016, pp. 15-26.

569 **C-0186**, ExO's Nullity Appeal before the TFJA, 19 August 2019, pp. 15, 23-33, 56, 99-105, 132-133, 144-145.

570 **C-0002**, MIA, 21 August 2015, pp. 803-817, 830-843, 925-926.

571 Clarke WS, ¶¶ 32-54, 59-63.

572 Pliego ER2, ¶¶ 117-119.

573 Pliego ER2, ¶¶ 18, 119, and Table 1.

574 [redacted]

232. Finally, a series of other reasons also demonstrate that the 2018 Denial cannot have been the outcome of a fair and objective evaluation and that the Denial was pre-determined.[575]

233. Thus, the arbitrary determination of the MIA is apparent from the Denials themselves and [redacted][576] This cannot possibly be a lawful exercise of regulatory or police powers.

234. Because Mexico's police powers have not been applied for a legitimate public purpose, this Tribunal can exercise its authority to hold Mexico accountable for its Treaty breaches.

B. Respondent Unlawfully Expropriated Claimant's Investment in Mexico

235. Article 1110(1) of NAFTA precludes a party from directly or indirectly expropriating an investment of an investor unless it is done: "(a) for a public purpose; (b) on a non-discriminatory basis; (c) in accordance with due process of law and Article 1105(1); and (d) on payment of compensation in accordance with paragraph 2 through 6."[577]

236. Claimant's Memorial established that the unlawful Denial of ExO's MIA in 2018 constituted an indirect expropriation of Odyssey's investments in Mexico.[578]

237. First, the expropriation lacked any public purpose. Invoking the words "protection of the environment" does not make it so.[579] It is clear that the MIA Denial was executed based

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575 *See supra*, ¶¶ 77-87. These included: a manifestly absurd comparison of the Project with underwater mining projects, when in fact this is a dredging project for the purposes of environmental impact and a mischaracterization of the Project's effect on benthic organisms and their recolonization, among others.

576 [redacted]

577 **CL-0081**, NAFTA, art. 1110(1).

578 Claimant's Memorial, ¶¶ 299-313.

579 The *ADC v. Hungary* tribunal explained: "[i]f mere reference to '*public interest*' can magically put such interest into existence and therefore satisfy this requirement, then this requirement would be rendered meaningless since the Tribunal can imagine no situation where this requirement would not have been met." **CL-0003**, *ADC Affiliate Limited & ADC & ADMC Management Limited v. Republic of Hungary* (ICSID Case No. ARB/03/16) Award, 2 October 2006, ¶ 432.

on Mr. Pacchiano's political decision rather than on legitimate environmental concerns.[580]

238. Second, the expropriation did not respect due process of law. As Professor Dolzer and Margarette Stevens confirmed, "the requirement would suggest that the investor for example has the right to advance notification and a fair hearing before the expropriation takes place; and that the decision be taken by an unbiased official and after the passage of a reasonable period of time."[581] None of this occurred here, where the expropriation occurred under the cover of darkness and by a biased and politically-driven official who arbitrarily denied the MIA.

239. Finally, Mexico has paid no compensation to Odyssey, as required by Article 1110.

240. Mexico's arguments in response are unavailing.

1. Odyssey Most Certainly Had an Investment Capable of Uncompensated, Indirect Expropriation Contrary to NAFTA Article 1110

241. Respondent's first argument against Claimant's theory of indirect expropriation is that "Claimant had no right or rights capable of expropriation."[582] In particular, Mexico focuses on the fact that the Concessions did not grant Claimant a right to exploit the minerals absent an approved environmental impact assessment.

242. However, Respondent's argument overlooks that expropriation "may extend to any right which can be the object of a commercial transaction."[583] Article 1139 of NAFTA defines investment to include ". . . property, tangible or intangible, acquired in the expectation or used for the purpose of economic benefit or other business purposes."[584] The same Article goes on to include in the definition of investment, "interests arising from the

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580 *See supra*, ¶¶ 90-119.

581 **CL-0183**, R. Dolzer and M. Stevens, Bilateral Investment Treaties (1995), p. 106.

582 Respondent's Counter-Memorial, ¶¶ 546-557.

583 **RL-0067**, *Amoco International Finance Corporation v. Iran* (Iran-US Claims Tribunal) Award, 14 July 1987, ¶ 108.

584 **CL-0081**, NAFTA, art. 1139(g).

commitment of capital or other resources in the territory of a Party to economic activity in such territory . . . ."[585]

243. Indeed, as Professors Waelde and Kolo observed, the modern rules regarding investment protection are not aimed only at the protection of tangible property, but also recognize and protect the value of property that comes from "the capability of a combination of rights in a commercial and corporate setting and under a regulatory regime to earn a commercial rate of return."[586] As Claimant has already explained, Odyssey's investments in Mexico include, but are not limited to,[587] ExO as a business enterprise operating in Mexico and the concession rights over the phosphate deposit that it would have been able to exploit, but for Respondent's wrongful MIA Denial.

244. Mexico's measures, notably SEMARNAT's arbitrary denial of the MIA approval, had the effect of rendering this massive, incredibly valuable phosphate deposit worthless because ExO has been prevented from exploiting it.

245. Additionally, Respondent claims that concessions cannot be expropriated because they do not grant a right to exploit a deposit before the MIA is approved.[588] This is plainly wrong. As Mr. Kunz has acknowledged, concessions are an intangible asset in Mexico which are clearly subject to expropriation.[589] As Mr. Kunz explains:[590]

> Due to the abovementioned reasons, the Ley del Impuesto sobre la Renta (Income Tax Law) requires the mining licensees to treat [the mining concessions] as INTANGIBLE ASSETS in its Article 33, consistent with the concepts set in the financial reporting standards. For this concrete case, the Norma de Información Financiera (Financial Reporting Standard) ("NIF") C-8 defines intangible assets as "identifiable non-monetary assets with no

585 **CL-0081**, NAFTA, art. 1139(h).

586 **CL-0190**, T. Waelde & A. Kolo, *Environmental Regulation, Investment Protection and 'Regulatory Taking' in International Law* (2001), p. 835.

587 Claimant's Memorial, ¶ 313.

588 Respondent's Counter-Memorial, ¶¶ 548-549.

589 Kunz ER1, ¶¶ 17-19; Kunz ER2, ¶¶ 4-15, 34.

590 Kunz ER2, ¶ 11, citing **C-0462**, Colegio de Contadores Públicos Boletín #19, Norma de Información Financiera: Activos Intangibles NIF C-8, July 2018, p. 2.

physical substance that shall generate future financial benefits controlled by the entity."

246. Mexico also unsuccessfully tries to distinguish this case from other cases wherein tribunals found that there had been an unlawful expropriation, such as *Tethyan v. Pakistan*, *South American Silver Mining*, and *Bear Creek*.[591] Nevertheless, all of these cases prove that mining concessions and/or associated rights can be expropriated, and so can the value of the company holding those rights.[592]

2. The Impact of the Denial of the MIA Constituted an Indirect Expropriation Despite Odyssey's Retention of Legal Title over ExO

247. Mexico's argument that there can be no expropriation because Odyssey retains legal title over ExO[593] goes against the very definition of indirect expropriation.

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591 Respondent's Counter-Memorial, ¶¶ 555-557.

592 In *Tethyan v. Pakistan*, the tribunal determined that, by denying a "Mining Lease Application," respondent had expropriated claimant's rights over the Reko Diq Project and the Joint Venture. Respondent here claims the *Tethyan* tribunal's conclusion that there had been an indirect expropriation was premised on the following passage: "in light of the contractual and regulatory framework as well as the direct assurances given by Government officials on the basis of which [the claimant] decided to invest more than US$ 240 million." (cited in Respondent's Counter-Memorial, ¶ 556). However, that paragraph of the decision (paragraph 1230) actually refers to the tribunal's analysis on the FET standard. It has nothing to do with the tribunal's analysis on indirect expropriation, which actually commences in paragraph 1319 of the decision and, in any event, the tribunal actually found that the denial of TCCP's Mining Lease Application was a measure having an effect equivalent to expropriation. **RL-0058**, *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case No. ARB/12/1) Decision on Jurisdiction and Liability, 10 November 2017, ¶¶ 1230, 1296, 1302-1303, 1319. Respondent's attempts to differentiate this case from *South American Silver v. Bolivia* also fail. Indeed, Respondent itself acknowledges that "Bolivia's president himself referred to the need to expropriate a mining concession by decree" (Respondent's Counter-Memorial, ¶ 555). Of course, unlike Odyssey's case, *South American Silver* was a case of direct expropriation. But it clearly evinces that a mining concession can be expropriated under international law, despite Mexico's contentions to the contrary. In the words of the tribunal: "there is no doubt that the Respondent expropriated the Mining Concessions through the issuance of the Reversion Decree." **CL-0108**, *South American Silver Limited (Bermuda) v. the Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 551. Finally, Mexico cannot draw a clear line between this case and the *Bear Creek* case regarding the type of right being expropriated. The *Bear Creek* tribunal recognized that there had been an unlawful indirect expropriation by issuance of Peruvian Decree 032 even though claimant maintained formal title to its mining concessions. **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶¶ 415-416. The same is true here, where Odyssey's mining Concessions have been indirectly expropriated by denying the MIA.

593 Respondent's Counter-Memorial, ¶¶ 562-564.

248. As Claimant has already established in its Memorial, Article 1110 covers *indirect*, as well as direct, expropriation.[594] Indeed, this was the purpose of including a reference to "a measure tantamount to nationalization or expropriation" in the wording of Article 1110.[595] In fact, international tribunals have consistently recognized that "[a] deprivation or taking of property may occur under international law through interference by a state in the use of that property or with the enjoyment of its benefits, even where legal title to the property is not affected."[596]

249. Mexico's measures deprived Odyssey's investments of any economic value because the value of Odyssey's investments was inextricably linked to the rights to develop and exploit the Don Diego deposit. These rights were completely frustrated by Mexico's manifestly arbitrary Denial of the MIA in 2018. It is true that Odyssey retains legal ownership of ExO's shares, but these only exist in form and have no real economic value since ExO was a single-purpose entity constituted to carry out the Don Diego dredging Project. This situation is similar to that of the *Tethyan* case, where the tribunal found—given that the sole purpose of the joint venture into which the claimant had entered was to exploit and mine the deposit—that the value of the investment "was effectively neutralized" once the mining lease had been unlawfully denied.[597]

250. Had Mr. Pacchiano not ordered the technical staff at the DGIRA to deny the MIA, the Project would have been approved, ExO would currently be exploiting it, and Odyssey would be profiting from its investment.

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594 Claimant's Memorial, ¶¶ 299-303.

595 **CL-0081**, NAFTA, art. 1110(1).

596 **CL-0191**, *Tippetts, Abbett, McCarthy, Stratton v. TAMS-AFFA Consulting Engineers of Iran* (IUSCT Case no. 7) Award, 29 June 1984, ¶ 21. *See also* **CL-0166**, *Harza Engineering Company v. The Islamic Republic of Iran* (IUSCT Case No. 98) Award, 30 December 1982, ¶ 28 ("[A] taking of property may occur under international law, even in the absence of a formal nationalization or expropriation, if a government has interfered unreasonably with the use of property."); **CL-0188**, *Starrett Housing Corporation, Starrett Systems, Inc. and others. v. the Government of the Islamic Republic of Iran*, *Bank Markazi Iran and others* (IUSCT Case No. 24) Interlocutory Award, 19 December 1983, ¶ 66 ("[I]t is recognized in international law that measures taken by a State can interfere with property rights to such an extent that these rights are rendered so useless that they must be deemed to have been expropriated.").

597 **CL-0116**, *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case No. ARB/12/1) Award, 12 July 2019, ¶ 273.

3. Odyssey Had Investment-Backed Expectations That the Don Diego Project Would Be Judged on Its Merits and on Its Actual Environmental Impact

251. Contrary to Mexico's position,[598] Respondent's unlawful measures interfered with and frustrated Odyssey's reasonable investment-backed expectations that Mexico would follow its own laws and evaluate the Project on its merits.

252. As a preliminary point, in its Counter-Memorial, Respondent seems to confuse the term "investment-backed expectations" with "legitimate expectations."[599] While the latter are a component of the FET standard, the former have been taken into account by arbitrators as a means of evaluating whether the loss suffered by an investor as a result of the adoption of a regulatory measure should be construed as the product of an uncompensated, indirect taking or as the product of a legitimate exercise of police power.[600] For example, in determining whether an expropriation had occurred, the *Glamis Gold* tribunal examined: "(1) the extent to which the measures interfered with reasonable and investment-backed expectations of a stable regulatory framework, and (2) the purpose and character of the governmental actions taken."[601]

253. There is no doubt that the 2018 MIA rejection substantially interfered with the Project and with Odyssey's investment-backed expectations. Indeed, after investing tens of millions of dollars into developing the Project and ensuring that it met the most rigorous environmental standards, Odyssey expected the approval process to be conducted in good faith, that due process norms would be observed, and that the officials' decisions would be guided by the science and evidence before them.[602] Although the technical staff

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598 Respondent's Counter-Memorial, ¶¶ 565-572.

599 Respondent's Counter-Memorial, ¶¶ 565-572.

600 **CL-0112**, *Tecnicas Medioambientales Tecmed S.A. v. The United Mexican States* (ICSID Case No. ARB(AF)/00/2) Award, 29 May 2003, ¶ 122.

601 **CL-0055**, *Glamis Gold, Ltd. v. United States of America* (UNCITRAL) Award, 8 June 2009, ¶ 356; *see also* **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 176(k).

602 The *Bear Creek* tribunal reached a similar conclusion when stating: "Claimant invested tens of millions of dollars in developing the Santa Ana Project and reasonably expected that Respondent would not interfere with Claimant's right to engage in mining activity for economic benefit arbitrarily, discriminatorily, and without due process of law." **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶ 343.

expressed their general approval of the MIA and the Project itself, the Mexican government did not issue the Project's MIA. Rather, the technical team's scientific decision was overridden by the Secretary for reasons not permitted under Mexican law.[603]

254. Additionally, Mexico denies that there was an expropriation on the grounds that the measures taken were a lawful exercise of its police powers in relation to the environment.[604] As explained above, this argument is meritless.

255. Claimant does not dispute that states are vested with a legitimate right to exercise police powers in protecting the environment. Yet, Claimant had an investment-backed expectation that these powers would be exercised fairly and equitably, in good faith, proportionally, non-arbitrarily, and respecting due process. Indeed, the *Pope Talbot v. Canada* decision recognized the importance of closely examining states' reliance on police powers to prevent them from being used as a blanket excuse.[605] As the tribunal explains:[606]

> Canada appears to claim that, because the measures under consideration are cast in the form of regulations, they constitute an exercise of "police powers" . . . While the exercise of police powers must be analyzed with special care, the Tribunal believes that Canada's formulation goes too far . . . Indeed, **much creeping expropriation could be conducted by regulation, and a blanket exception for regulatory measures would create a gaping loophole in international protections against expropriation.**

256. This has not been the case here, where the scientific and environmental processes were completely subverted by the political will of Secretary Pacchiano.

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603 Herrera ER1, ¶¶ 19-21, 25, 54-61, 77-79, 82-88, 92.

604 Respondent's Counter-Memorial, ¶¶ 558-561.

605 **CL-0089**, *Pope & Talbot Inc v. The Government of Canada* (UNCITRAL) Interim Award, 26 June 2000, ¶ 99.

606 **CL-0089**, *Pope & Talbot Inc v. The Government of Canada* (UNCITRAL) Interim Award, 26 June 2000, ¶ 99.

C. Mexico Breached Article 1102 of NAFTA

1. The Standard of National Treatment Protection Under Article 1102

257. The parties appear to be in general agreement on the components of the national treatment analysis: (i) comparison of "treatment" granted at various stages in the life of an investment process; (ii) consideration of whether and how the foreign investor may be in like circumstances (*i.e*. properly comparable) to local investors and/or investments; and (iii) an assessment of whether the treatment accorded to the foreign investor and/or its investment is less favorable than what was accorded to the domestic investor and/or investment.[607]

258. Respondent contends that an additional standard of more stringent comparability should be applied to complex investments[608] but provides no authority whatsoever for the proposition. That is because no such authority exists to support this novel argument.

259. Instead of considering each element of Article 1102 in order, Respondent essentially devotes its entire national treatment section to advancing its new comparability theory and heaping unjustified criticism on Claimant's expert, Mr. Vladimir Pliego, stating in conclusory terms that it is "clear" that Mr. Pliego's argument is wrong without supporting its assertion.[609] Mexico's criticism of Mr. Pliego boils down to the claim that he may have worked as an official in SEMARNAT at some point in the past when some of the comparable projects at issue were being evaluated—as though that would make him less, rather than more, qualified to express his opinion.[610] In any event, Mr. Pliego confirms in his Second Expert Report that he was not involved in the evaluation of the projects that he has concluded are comparable to the Project.[611] More importantly, Mr. Pliego's Second Expert Report provides a reasoned explanation of why the projects are comparable. Reference is made to the second Pliego report further below.

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607 Claimant's Memorial, ¶¶ 315-316; Respondent's Counter-Memorial, ¶ 574.
608 Respondent's Counter-Memorial, ¶ 577.
609 Respondent's Counter-Memorial, ¶ 609.
610 Respondent's Counter-Memorial, ¶ 610.
611 Pliego ER2, ¶¶ 81-83.

260. Moreover, as both the *Feldman* and *Bilcon* tribunals found, once a *prima facie* case has been made for a breach of national treatment, it lies with the respondent to explain why it nonetheless contemporaneously possessed a valid, non-discriminatory reason for treating like-situated comparators differently.[612] This is not a matter of shifting legal burdens; it is simply a matter of logic. The strategic burden of proving one's case shifts between parties as each side provides evidence to support its case. Here, Mexico has failed to show that there were any public policy considerations that could have warranted discriminatory treatment.

261. Respondent merely states that "[t]he Respondent's actions related to the evaluations and conditional authorizations of the Six Projects previously described were transparent, rational, and in accordance with legitimate objectives and policies."[613] But Claimant is not challenging the transparency, rationality, or legitimacy of the environmental impact assessment of the six projects. Rather, it has shown with evidence that the Don Diego Project was treated differently from the others. What Respondent has failed to do is provide a non-discriminatory, non-arbitrary policy justification for that differential treatment.

2. The Treatment Granted by Mexico Was Related to the Evaluation of ExO's MIA

262. This claim, like in *Occidental v. Ecuador*[614] and—especially—*Bilcon v. Canada*,[615] is about treatment as process rather than as a simple comparison of outcomes. Claimant is not arguing that because X or Y project was approved, the Don Diego Project had to be approved, too. Odyssey's position is that a comparison of the approval *processes* for comparable dredging projects reveals that Claimant's investment received less favorable

612 **CL-0068**, *Marvin Feldman v. Mexico* (ICSID Case No. ARB(AF)/99/1) Award, 16 December 2002, ¶ 181; **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 718.

613 Respondent's Counter-Memorial, ¶ 612.

614 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶¶ 167-179.

615 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 685-731.

treatment. This is unsurprising given that, unlike the six comparable projects, the Don Diego Project faced unlawful interference by the Secretary.

263. Indeed, the *Bilcon* tribunal applied the same analysis in determining that treatment conferred upon an investment project in respect of an environmental impact assessment process could properly be characterized as "treatment" for the purposes of NAFTA Article 1102.[616] So, too, should the MIA process in this case be construed as "treatment" which was manifestly and yet inexplicably less favorable than that which was accorded to other enterprises pursuing approval for their dredging projects.

3. The Six Comparable Projects Identified by Claimant Concern Investments by National Investors in Mexico, Which Are Covered Under NAFTA for Comparison Purposes

264. In its Memorial, Claimant identified six comparable dredging projects *vis-à-vis* the Don Diego Project that were espoused by state-owned Mexican entities.[617] Respondent contends that none of these are comparable projects for a series of reasons.[618] Respondent begins by asserting that merely because these projects were "run by entities of the federal or state governments,"[619] they must be excluded from Article 1102 comparison on the basis that they were not controlled by private investors.

265. First, no legal authority exists for that proposition. Indeed, not only does Respondent fail to cite any academic or arbitral authority for the proposition, but it is expressly contradicted by NAFTA. Article 1139, which provides context for the interpretation of Article 1102, provides, in relevant part: "investor of a Party means a Party or **state enterprise thereof**."[620] In fact, in *UPS v. Canada*, the tribunal considered that Canada Post qualified as an investment of a party under Article 1139 of NAFTA even though it was

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616 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 689. *See also* **CL-0195**, *United Parcel Service of America, Inc. v. Government of Canada* (UNCITRAL) Award on the Merits, 24 May 2007, ¶ 174 (in which the tribunal determined that the customs authorities' processing of items constitutes treatment for the purposes of Article 1102).

617 Claimant's Memorial, ¶¶ 182-186.

618 Respondent's Counter-Memorial, ¶¶ 581-586.

619 Respondent's Counter-Memorial, ¶¶ 579-580.

620 **CL-0081**, NAFTA, art. 1139 (emphasis added).

owned by the Canadian government. As the tribunal explained: "Canada Post qualifies as an investment of a Party. The Canadian Government as owner of Canada Post qualifies as an investor for these purposes under NAFTA (see article 1139)."[621]

266. Second, the applicable environmental standards, regulations, and processes do not distinguish between projects run by private entities and projects run by entities affiliated with Mexican states or the federal government.[622] That is to say, the applicable environmental standards are not relaxed just because the state is behind a project.

267. Third, while the sponsors of the comparable projects were parastatal entities—that is, entities of a mixed public and private nature[623]—they nevertheless underwent their respective environmental approval processes as private entities, as SOLCARGO even recognizes.[624] This admission also directly contradicts Respondent's claim that these projects "are in charge of entities of the federal or state governments."[625] Accordingly, Mexico's argument that the investors or investments are not comparable because the investors are state-owned entities or affiliated with the Mexican government is wrong.

4. All the Projects Identified by Claimant Are in "Like Circumstances" to the Don Diego Project

268. As the *Pope and Talbot* tribunal held, the meaning of "like circumstances" is "context dependent" and has "no unalterable meaning across the spectrum of fact situations."[626] Moreover, "the application of the like circumstances standard will require evaluation of the entire fact setting surrounding" the investment.[627] This includes the "character of the

621 **CL-0195**, *United Parcel Service of America, Inc. v. Government of Canada* (UNCITRAL) Award on the Merits, 24 May 2007, ¶ 85.
622 Pliego ER2, ¶ 93.
623 SOLCARGO ER, ¶ 247.
624 SOLCARGO ER, ¶ 247.
625 Respondent's Counter-Memorial, ¶ 580.
626 **CL-0090**, *Pope & Talbot Inc. v. The Government of Canada* (UNCITRAL) Award on the Merits of Phase 2, 10 April 2001, ¶ 75.
627 **CL-0090**, *Pope & Talbot Inc. v. The Government of Canada* (UNCITRAL) Award on the Merits of Phase 2, 10 April 2001, ¶ 75.

measures under challenge."[628] Respondent does not challenge this aspect of the *Pope and Talbot* standard.

269. Claimant and Claimant's expert, Mr. Pliego, have furnished extensive proof that the following six projects are in like circumstances to the Don Diego Project:[629]

a. ESSA Project;[630]

b. Laguna Verde Project;[631]

c. Sayulita Project;[632]

d. Veracruz Project;[633]

e. Matamoros Project;[634] and

f. Santa Rosalía Project.[635]

270. Respondent's main argument in response is that the Project must be considered *sui generis* and therefore is not open to comparison for purposes of assessing its compliance with Article 1102. Particularly, Respondent states: "none of the six Projects involves marine mining activities, their purpose was not to dredge phosphate sands to extract phosphate mineral for subsequent marketing as a raw material in the production of fertilizers."[636]

271. However, NAFTA Article 1102 does not require investors to be in *identical* circumstances, but rather in *similar* circumstances.[637] Respondent appears to accept this position elsewhere in the Counter-Memorial when it admits that what constitutes "like

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628 **CL-0090**, *Pope & Talbot Inc. v. The Government of Canada* (UNCITRAL) Award on the Merits of Phase 2, 10 April 2001, ¶¶ 75-76.

629 Pliego ER1, ¶¶ 279-317; Claimant's Memorial, ¶ 326.

630 **C-0103**, MIA ESSA Project, January 2008.

631 **C-0138**, MIA Laguna Verde Project, December 2015.

632 **C-0113**, MIA Sayulita Project.

633 **C-0118**, MIA Veracruz Project.

634 **C-0034**, MIA Matamoros Project.

635 **C-0135**, MIA Santa Rosalía Project, June 2019.

636 Respondent's Counter-Memorial, ¶ 589.

637 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 692; **CL-0156**, *Cargill, Incorporated v. Republic of Poland II* (UNCITRAL) Award, 29 February 2008, ¶¶ 309-311.

circumstances" for the purposes of Article 1102 should not be treated as conterminous with the WTO's "like product analysis."[638]

272. As for the comparison of projects, Claimant notes that concentrating on the specific purpose of any given dredging project entirely misses the point from the standpoint of environmental impact assessment. The relevant question is whether the proposed dredging creates similar environmental risks. In this case, the relevant comparison is dredging in coastal areas.

273. Of particular relevance is *Bilcon*'s consideration of comparable projects for the purposes of determining a breach of Article 1102 in terms of the environmental impact assessment process. The *Bilcon* project related to a quarry and marine terminal in the Canadian province of Nova Scotia at Whites Point in Digby Neck.[639] Bilcon applied for an environmental permit to commence operations for the project, which was denied by the Canadian government on the stated basis that the project would have adverse environmental impact on the "community core values" of Digby Neck.[640]

274. Following rejection of the project, Bilcon initiated a Chapter 11 arbitration against Canada for, amongst other things, breach of national treatment. This claim related to Canada's less favorable treatment of Bilcon's project *vis-à-vis* other investors as regards the evaluative standard for environmental impact assessments at the federal level. Canada argued that the comparison should be confined to projects where, like Bilcon's, there was significant opposition within a local community.[641] The tribunal rejected Canada's submission in holding:[642]

> Article 1102 refers to situations where investors or investments find themselves in "like circumstances". The language is not

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638 Respondent's Counter-Memorial, ¶ 584.

639 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 5, 120.

640 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 20-24, 505-506.

641 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 690.

642 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 692, 694.

> restricted as it is in some other trade-liberalizing agreements, such as those that refer to "like products". Article 1102 refers to the way in which either the investor or investment is treated, rather than confining concerns over discrimination to comparisons between similar articles of trade. Moreover, the operative word in Article 1102 is "similar", not "identical". In addition to giving the reasonably broad language of Article 1102 its due, a Tribunal must also take into account the objects of NAFTA, which include according to Article 102(1)(c) "to increase substantially investment opportunities in the territories of the Parties". . . . Cases of alleged denial of national treatment must be decided in their own factual and regulatory context**. In the present case, what is at issue is whether the Investor was treated less favorably for the purpose of an environmental assessment. The federal Canada law in question, the CEAA, is one of very general application. It applies the "likely significant adverse effects after mitigation" standard of assessment as a necessary component of environmental review across a wide range of modes and industries**, including any marine terminals or quarries that are assessed under its provisions.

275. In applying this standard, the *Bilcon* tribunal found that five projects that had been proposed as comparators by claimants were in "like circumstances" to the Whites Point project.[643]

276. The first three comparable projects evaluated by the tribunal "involved assessments that included the marine terminal component of a project that was connected to a quarry and took place in an ecologically sensitive coastal area."[644]

a. The Belleoram project was a quarry and terminal project sponsored by a Canadian-controlled company.[645] In determining that this project was comparable, the tribunal considered that "many of the environmental concerns will be similar" to Whites Point.[646] The decision approving the Belleoram project mentioned that there were a "variety of likely significant adverse effects and considered that all of them would be mitigated to a satisfactory extent by the

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643 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 696, 706, 709.

644 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 696.

645 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 697.

646 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 697.

adoption of mitigation measures that could reasonably be applied."[647] The tribunal also emphasized that "[w]hat is of critical importance here is that the Whites Point project did not receive the expected and legally mandated application, for the purposes of federal Canada environmental assessment, of the essential evaluative standard under the *CEAA* [Canadian Environmental Assessment Act]."[648]

b. Another project, the Aguathuna Quarry and Marine Terminal project, was also considered by the *Bilcon* tribunal to be in like circumstances to the Whites Point Project.[649] Similarly to Belleoram, this Project was also located "close to sensitive coastal/marine environments, and close to a community."[650]

c. The third marine terminal project was the Tiverton Harbour project in Nova Scotia.[651] The proponent for this project was the Federal Government of Canada, and it involved the construction of a new harbor facility (it was not a quarry project, unlike Whites Point).[652] In its analysis, the tribunal focused on this project's similar environmental impacts to the Whites Point Project. As the tribunal recognized: "[s]ome of the blasting had to be carried out underwater, with potentially much greater destruction of fish habitat than would have resulted from blasting on land at some setback from the water, as in Bilcon's project. Fish habitat might also have been affected by construction of a break-water, installation of floating docks, dredging the basin and constructing the wharf. **The potential for damage to fish habitat was greater at Tiverton because there was underwater blasting and the deposit of a large volume of rock on the harbor floor**."[653] Canada argued that Tiverton was not comparable to Whites Point because it "involved a quarry that would only be operated for several months to provide material for the terminal."[654] The tribunal rejected this objection since this did not explain "why the Bilcon Project was not, as part of the analysis,

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647 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 697.

648 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 697.

649 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 698.

650 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 698; **CL-0197**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) First Expert Report of David Estrin, 8 July 2011, ¶ 35.

651 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 699.

652 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 699.

653 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 699 (emphasis added).

654 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 700.

> subjected in all of its likely adverse effects to the same thorough application of the approach—including identifying mitigation measures—required by s. 16 of the *CEAA*."[655]

277. Similarly to Mexico here, Canada opposed the use of these three projects as comparators to the Whites Point project because they were not *exactly* the same type of quarrying projects as Bilcon had proposed.[656] Canada claimed that "the outcomes of . . . projects involving quarries and marine terminals might be legitimately different based on the facts."[657] The tribunal agreed that while the outcome might be different depending on the facts of the project, "it can be a denial of national treatment to apply a harsher standard to the non-Canadian project in like circumstances."[658]

278. The *Occidental v. Ecuador* tribunal followed a similar analysis to that of the *Bilcon* tribunal.[659] In *Occidental*, the claimant complained that its investment in the oil sector was not given the same treatment as other exporters in accordance with Ecuadorian law.[660] Ecuador objected to the comparability of Occidental's investment *vis-à-vis* other exporters because the comparator projects relied upon by Occidental were not in the oil business.[661] The tribunal did not agree with Ecuador and instead found that non-oil

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655 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 700.

656 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 705.

657 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 705.

658 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 705. The tribunal also found two additional projects to be in "like circumstances" to the Whites Point project: the Rabaska project and the Cacouna Energy LNG Terminal project. The first project was considered to have proposed similar mitigation measures to the Whites Point project and to be located in a similarly environmentally sensitive area. The same was true with regards to the Cacouna Energy project, which "was located next to a sensitive marine environment, and involved a marine terminal component. In both cases there was significant community opposition, including concerns about the impact on tourism." **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 706-709.

659 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 175. In fact, *Occidental v. Ecuador* is cited by the *Bilcon* tribunal at ¶ 693.

660 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 168.

661 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 171.

exporters were "in like situations" to Occidental. As the tribunal explained: "the purpose of national treatment is to protect investors as compared to local producers, and this cannot be done by addressing exclusively the sector in which the particular activity is undertaken."[662] The tribunal also concluded that there had been a denial of national treatment since the tax calculating process had been differentially applied with regards to Occidental *vis-à-vis* the other exporters.[663]

279. Much like *Bilcon*, Odyssey's Project should have been evaluated in the same manner as the other six projects that Claimant identified in its Memorial, as those comparable projects *prima facie* produced comparable environmental impacts (in fact, more detrimental, as Mr. Pliego explains).[664] Mexico's comment in its Counter-Memorial that "Respondent does not consider it necessary to go into technicalities,"[665] and SOLCARGO's statement that "the discussion of which of the seven projects produces greater environmental impacts is idle,"[666] simply seek to avoid this reality. As explained *infra*, all six projects are comparable to the Don Diego Project because the potential for similar environmental impact to similar ecosystems derived from the same activity and involved the application of the same environmental law.

a. These Projects Involved the Same Activity, Dredging, with Comparable Environmental Impacts

280. The Don Diego Project would have resulted in the dredging of 1 km^2 of sediment per year, with mechanically separated, uneconomic material deposited back on the seabed. Like the Don Diego Project, the other projects also involved seabed dredging, and in shallower areas.[667] In particular, the ESSA Project involved the dredging of the navigation channel and a series of seawater collection canals and other canals;[668] the Laguna Verde Project

662 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 173.

663 **CL-0179**, *Occidental Exploration and Production Company v. The Republic of Ecuador* (LCIA Case No. UN 3467) Final Award, 1 July 2004, ¶ 177.

664 Pliego ER1, ¶¶ 318-359; Pliego ER2, ¶¶ 96, 108, 111, 113, 119, and Annex 2.

665 Respondent's Counter-Memorial, ¶ 590.

666 SOLCARGO ER, ¶ 303.

667 Pliego ER1, ¶¶ 282-285.

668 **C-0103**, MIA ESSA Project, January 2008, pp. 4-5; Pliego ER1, ¶ 237.

required the dredging of the inner harbor, a canal, and an inlet;[669] the Sayulita Project contemplated dredging for the installation of a submarine transmitter;[670] the Veracruz Project required dredging in order to locate new canals, turning basins, and maneuver areas for the port;[671] the Matamoros Project required the dredging of a canal;[672] and the Santa Rosalía Project contemplated the dredging of the inner harbor of the port of Santa Rosalía.[673]

281. Moreover, while the ESSA Project proposed the use of a mechanical dredge and the Sayulita Project did not specify a dredger to be used, the other four projects, like Don Diego, proposed the use of hydraulic dredgers.[674]

282. In each case, the dredging process would have produced comparable environmental impacts,[675] a fact that Mexico also recognizes.[676] Despite using the sands for a purpose other than those contemplated in the other projects, the Project was similar to any common dredging project in Mexico. It dredged, transported, and deposited sand somewhere else.[677]

283. Because the Project mechanically separates the sand and uses the phosphate rock, Mexico claims that it is a mining project and therefore is not comparable to the other dredging projects.[678] This argument is specious. Nearly all dredging projects involve some type of mechanical separation. In any event, as the *Bilcon* analysis makes clear, in a comparable treatment analysis, "what is at issue is whether the Investor was treated less

669 **C-0138**, MIA Laguna Verde Project, December 2015, p. 12; Pliego ER1, ¶ 246.
670 **C-0113**, MIA Sayulita Project, pp. 9, 16, 20; Pliego ER1, ¶ 251.
671 **C-0118**, MIA Veracruz Project, p. 106; Pliego ER1, ¶ 259.
672 **C-0034**, MIA Matamoros Project, pp. 1-40, 77; Pliego ER1, ¶¶ 268-269.
673 **C-0135**, MIA Santa Rosalía Project, June 2019, p. 11; Pliego ER1, ¶ 275.
674 Pliego ER1, ¶¶ 282-286.
675 In his first expert report, Mr. Pliego explains that all comparable projects could have possible effects on species protected under NOM-059 (Pliego ER1, ¶¶ 300-305), that they all have an impact on the seabed (Pliego ER, ¶¶ 306-312), and that they all have an impact on the water column (Pliego ER, ¶¶ 313-317); *see also* Pliego ER2, ¶¶ 90, 101-102, and Annex 2.
676 "The dredging of a seafloor is an activity that invariably produces an environmental impact due to its nature." Respondent's Counter-Memorial, ¶ 11.
677 Pliego ER1, ¶¶ 282-286.
678 Respondent's Counter-Memorial, ¶¶ 587, 589.

favorably for the purpose of an environmental assessment";[679] as such, the purpose of the activity has no relevance to the analysis of the relevant environmental impacts especially where, as here, the projects are located in similarly sensitive environmental ecosystems and involve the same activity.

284. Moreover, though Mexico points out that every comparable project identified by Claimant involves dredging in smaller quantities,[680] this claim ignores two important considerations.

285. First, while the total Project area might be larger than that of the comparable projects, the Project only contemplates dredging 1 km^2 per year,[681] an important mitigation measure specifically intended to allow benthic organisms to recolonize the dredged area.[682]

a. Mexico and its experts make much ado about the size of the Don Diego Project, repeatedly but incorrectly asserting that the Project is one that would entail "dredging a specific area of the seabed for 24 hours, seven days a week and for 50 years."[683] Yet the reality is that the Project sought to dredge 1 km^2/year, and approximately 50 km^2 over a 50-year period, against the 20,000 km^2 expanse that comprises the Gulf of Ulloa as a whole.[684] This means an annual dredging volume of approximately four to six million m^3 of sediment, with approximately 50% of it returned to the seabed. [685]

b. The SOLCARGO Expert Report ignores the ecological stops and other features of the Project that make clear that dredging would not be a 24/7 operation, undermining the assertion that the other projects are different because dredging will not be continuous.[686]

286. In any event, Mexico's position is wrong: it parallels the reasoning advanced by Canada and rejected by the *Bilcon* tribunal that the Tiverton Harbor project was not comparable

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679 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 694.

680 Respondent's Counter-Memorial, ¶¶ 592, 595, 598, 600, 602, 605.

681 Pliego ER1, ¶ 42.

682 Pliego ER1, ¶ 103.

683 Respondent's Counter-Memorial, ¶ 65; *see also* ¶¶ 11, 96, 225, 286, and 526 for instances in which Mexico erroneously seeks to imply that the dredging is continuous over a 50-year period.

684 Annex A to Claimant's Memorial, ¶¶ 2, 8.

685 Annex A to Claimant's Memorial, ¶ 2.

686 *See* SOLCARGO ER, ¶¶ 258, 265, 281, 290, 295.

to Bilcon's project because the quarry associated with Tiverton would only operate for a few months, while Bilcon's quarry would have a longer duration. The tribunal in that case rejected Canada's argument in explaining that "[t]hese points do not explain, however, why the Bilcon project was not, as part of the analysis, subjected in all of its likely adverse effects to the same thorough application of the approach—including identifying mitigation measures."[687] Here, the length and quantity of dredging is not sufficient to explain why the Don Diego Project was more stringently evaluated than the other comparable projects.

287. Second, as SEMARNAT's own guidance explains, "the magnitude of the impacts does not necessarily have a directly proportional relationship to the size of the project."[688] This guidance contradicts Mexico's own experts, who argue that the Project is not comparable, *inter alia*, because of its "much smaller dimensions."[689] As Mr. Pliego explains:[690]

> The discussion that concerns us is the EIA [environmental impact assessment] process. From this, it follows that whether a project is situated within the legal parameters of other laws, whether the purpose of the dredging activity is different, whether [the project] has grounded the submission of the MIA in different fractions of Article 28 of the LGEEPA or even whether there are some differences in location within the coastal ecosystem, is irrelevant.

288. The comparable projects contained a series of characteristics that render their potential environmental impact on coastal ecosystems greater than that of the Don Diego Project. Namely, they were located in shallower areas closer to the coast with a greater diversity of species and which constitute fundamental feeding and breeding grounds for several

687 **CL-0122**, *William Ralph Clayton, William Richard Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 700.

688 **VP-0004**, Guía - MIA Regional, p. 50 (cited by Pliego ER2, ¶¶ 116, 158).

689 SOLCARGO ER, ¶ 301.

690 Pliego ER2, ¶ 107.

marine organisms.[691] As such, these projects provide an apt comparison from the perspective of environmental impact assessment.

b. These Projects Were All Required to Submit an Environmental Impact Assessment and Those EIAs Were Governed by Article 28 of LGEEPA

289. Investment tribunals have consistently held that activities regulated under the same legal regime should be considered as operating in like circumstances.[692] Here, all projects were considered for environmental impact assessments under LGEEPA and its regulations.[693] Particularly, Article 28 of LGEEPA requires that all projects that may cause an environmental impact be subjected to an environmental impact assessment process, including projects that take place in coastal ecosystems, such as the six comparable projects.

290. The fact that Article 28 of LGEEPA and the R-LGEEPA-EIA applied to all of these projects meant that they should have been evaluated under the same standard and using the same criteria. It is irrelevant, as SOLCARGO claims,[694] that different sections of Article 28 apply to the different projects. Indeed, what is important is that LGEEPA and the environmental standards had to be applied to all of these projects in the same manner.[695] The *Bilcon* tribunal confirmed this when determining that the Canada Environmental Assessment Act was "one of very general application," and that it required application of the same "likely significant adverse effects after mitigation" standard of review.[696]

291. Mexico tries to distract from this reality by pointing out that, unlike the other dredging projects, the Project is allegedly ruled by Mexican mining law.[697] However, the Mexican mining law operates only to grant the concession holder the title over the concession.

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691 Pliego ER1, ¶¶ 318-337; Pliego ER2, ¶¶ 96, 140.

692 **CL-0103**, *S.D. Myers, Inc. v. Government of Canada* (UNCITRAL) Partial Award, 13 November 2000, ¶¶ 247-250

693 Pliego ER1, ¶¶ 289-293.

694 SOLCARGO ER, ¶ 251.

695 Pliego ER2, ¶¶ 99-102.

696 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 694.

697 Respondent's Counter-Memorial, ¶ 587.

Conversely, in evaluating the Project, SEMARNAT is not governed by the mining law; it is governed only by LGEEPA and its ancillary regulations.[698] This is the law that renders all of the projects comparable.[699] Indeed, there is no provision in the mining law of Mexico determining what environmental impact standards should apply during an environmental impact assessment of a "mining project."

c. All Projects Were Developed in Coastal Areas as Defined by Mexican Law

292. An additional element that renders these six projects comparable is the fact that all were to have been situated within "coastal ecosystems" as defined by Article III, fraction XIII Bis of LGEEPA.[700] In its entirety, that article reads:[701]

> **Coastal ecosystems**: The beaches, the coastal dunes, the cliffs, intertidal fringes; the coastal wetlands such as the interdunary lagoons, coastal lagoons, estuaries, marshes, swamps, marshes, mangroves, flatlands, oases, cenotes, pastures, palm groves and floodplains; the coral reefs; the ecosystems formed by communities of macroalgae and seagrasses, sea beds or benthos and rocky coasts. These are characterized because they are located in the coastal area and can include marine, aquatic, and/or terrestrial portions; [t]hey cover the sea from a depth of less than 200 meters, up to 100 km inland or 50 m elevation.

293. Moreover, Respondent's argument that not all projects are in the same SAR is misguided. Indeed, as the *Resolute Forests* tribunal held, when a measure is under consideration, Article 1102 should not be limited to a comparison of investors located in the same region.[702] Similarly, none of the five projects that the *Bilcon* tribunal found to be comparable to that project was in the same environmental region as the Whites Point Project.

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698 Pliego ER1, ¶¶ 289-293.

699 Pliego ER1, ¶¶ 289-293.

700 Pliego ER1, ¶¶ 294-299.

701 **C-0014**, LGEEPA, 5 June 2018, art. 3, fr. XIII(Bis).

702 **CL-0184**, *Resolute Forest Products Inc. v. Government of Canada* (PCA Case No. 2016-13) Decision on Jurisdiction and Admissibility, 30 January 2018, ¶ 290.

d. All Projects Entailed Similar Impacts to the Marine Environment, and in Fact, the Other Projects Produced More Detrimental Impacts Than the Don Diego Project

294. Because the Project and the six comparator projects all related to dredging, they all had the potential to generate environmental impacts on the seabed as well as in the water column.[703] Additionally, all of the projects had the potential to affect sea turtles, although—as explained below—the characteristics of the six comparators actually rendered them more likely to do so than the Project.[704]

295. First, because one of the goals of a dredging project is the removal of sediment, all of the comparator dredging projects had a direct impact on the topography, bathymetry, and benthos present in the dredging area.[705] Mr. Pliego explains how the MIAs of the six comparable projects demonstrate that they, through their dredging activity, necessarily modified the seabed.[706]

296. Second, all of the projects under comparison had the potential to affect the water column through the formation of a sediment plume, both during dredging and when depositing the dredged material on the seabed.[707]

297. Mexico suggests that the Don Diego Project stands out among the comparators because it introduces an Eco-tube through which the uneconomic sediment could be returned to the seafloor.[708] While Mexico presents this fact as something that renders the Don Diego Project impossible to compare,[709] the Eco-tube was simply a mitigation measure. Its use did not alter the fundamental character of the Project's primary activity, *viz.* dredging. The Eco-tube was designed to discharge returning sediment seven meters above the seabed and, as a result, reduce the sediment plume (which is inevitable for all dredging activities) to a small area near the seafloor.[710] Employing the Eco-tube essentially nullified

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703 Pliego ER1, ¶ 279.
704 Pliego ER2, ¶¶ 96, 119, and Annex 2.
705 Pliego ER1, ¶ 306.
706 Pliego ER1, ¶ 308.
707 Pliego ER1, ¶ 313.
708 Claimant's Memorial, ¶ 77.
709 Respondent's Counter-Memorial, ¶ 587.
710 Pliego ER1, ¶¶ 44-45, 105, 138, 337; Pliego ER2, ¶ 52; Claimant's Memorial, ¶¶ 77, 125-126, 134(a).

the impact to the water column, making the Project comparatively much better than the other six, but certainly still comparable.[711]

298. In contrast, the ESSA, Veracruz, Matamoros, and Santa Rosalía projects all identified turbidity and the suspension of particles in the water column as likely impacts since the dredged material would be discharged at the ocean's surface.[712] None of these projects presented well-developed mitigation measures with respect to the impact on the water column that would result:

a. The ESSA Project recognized the potential of the returned sediment to generate turbidity, but the only mitigation measure it adopted to address this was the use of hydraulic dredging equipment to diminish the suspension of sediments.[713]

b. The Veracruz Project proposed mitigating the impacts of suspended sediment by ensuring a minimum of 25% light penetration in the water column. However, no measures were suggested to achieve this result.[714]

c. The Matamoros Project simply proposed the development of a virtual simulation to study hydrologic dynamics in the project area,[715] as opposed to articulating any actual mitigation measures, in sharp contrast to the sediment plume studies for the Don Diego Project carried out by the world-class consulting firm HR Wallingford, which grounded ExO's proposed mitigation measures.[716]

d. The Santa Rosalía Project sought to contain sediment dispersion through the use of removeable geotextile nets.[717]

299. Third, "[t]he dredging in each of those projects would take place in an ecosystem that contains NOM-059 species."[718] In particular, the available scientific evidence indicates that there are marine turtles present in each of the comparator project areas.[719] And in most of these projects, there was proof of the presence of *Caretta caretta* turtles, despite

711 Pliego ER1, ¶ 44-45, 105, 138, 337; Pliego ER2, ¶ 52; Claimant's Memorial, ¶¶ 77, 125-126, 134(a).
712 Pliego ER1, Table 8.
713 **C-0103**, MIA ESSA Project, January 2008, pp. 182, 188 (*see also* p. 198).
714 Pliego ER1, ¶ 352.
715 Pliego ER1, ¶ 350.
716 Pliego ER1, ¶ 351.
717 Pliego ER1, ¶ 382; **C-0135**, MIA Santa Rosalía Project, June 2019, p. 215. Of course, the use of geotextile nets does not eliminate sediment plume dispersion. (Pliego ER1, ¶ 381.)
718 Pliego ER2, ¶ 96. For a breakdown of the specific species and projects, see Pliego ER1, ¶ 301 and Table 6.
719 Pliego ER2, ¶¶ 96, 119; *see also* Table 1, pp. 7, 40.

SOLCARGO's unsubstantiated claim that no such evidence exists.[720] The presence of turtles in the comparator project areas is particularly relevant given that ExO's MIA was denied because of the Project's purported potential impact on *Caretta caretta* turtles.

300. In contrast, the Don Diego Project was supposed to have taken place in an area that is not part of the habitat of sea turtles due to its depth and temperature.[721] Despite this, ExO proposed world-class mitigation measures to avoid affecting turtles, such as deflectors and tickler chains, turning off the dredge pump when raising the draghead, and the implementation of on-board observers, among others, as part of the Program for the Protection of Sea Turtles in the Bay of Ulloa.[722]

301. More generally, Mexico implicitly admits in its Counter-Memorial that the six projects identified by Mr. Pliego really are comparable to the Don Diego Project due to their potential for environmental impact within a coastal ecosystem: "[l]ike Don Diego, the Six Projects are subject to the LGEEPA and the REIA and also required to be evaluated by the DGIRA. This is because such works and activities (*e.g.* hydraulic works, works related to general communication routes and developments near coastal ecosystems) may cause ecological imbalances or exceed limits and conditions established in different legal and regulatory instruments focused on environmental protection and the preservation of ecosystems."[723]

302. Neither Mexico nor its experts, however, engages with the clear, verifiable fact that the six comparable projects identified by Claimant had potentially greater environmental impacts because they occurred in areas of greater biodiversity and general vulnerability than the Don Diego Project.[724] As Mr. Pliego explains: [725]

> It is evident that all the reviewed projects would be carried [out] in areas with a much higher environmental sensitivity and with a greater probability of affecting the flora, fauna, and the

720 SOLCARGO ER, ¶¶ 260, 268, 276, 284, 291, 297.
721 Pliego ER1, ¶ 337.
722 Pliego ER1, ¶ 357; **C-0002**, MIA, 21 August 2015, pp. 803-817.
723 Respondent's Counter Memorial, ¶ 588; *see also* Pliego ER2, ¶ 103.
724 Pliego ER2, ¶¶ 19, 22, 108.
725 Pliego ER1, ¶ 359.

> environment. If all of these projects were approved with conditions (subject to monitoring), then it is my opinion that, the Don Diego Project, which would generate less environmental impact and adopted better mitigating measures, should have also been approved.

303. By comparison, the Project would have taken place in a less biodiverse area that has not been designated an environmentally protected area by any national or international instrument[726] and possesses environmental characteristics that render it less susceptible to environmental impacts than the others.[727]

5. The Don Diego Project Received Less Favorable Treatment Than the Mexican-Sponsored Comparable Projects

304. As Claimant has already demonstrated, all of the comparator projects were more favorably evaluated by SEMARNAT *vis-à-vis* the Project.[728] The *Bilcon* tribunal determined that different environmental impact assessments of comparable projects constituted less-favorable treatment.[729] In doing so, it gave particular weight to whether mitigation measures had been properly considered by the evaluator.[730] For instance, in evaluating the Rabaska project, which was deemed as comparable to Bilcon's Whites Point project, the tribunal determined:[731]

> The JRP [Joint Review Panel] proposed a number of mitigation measures to specifically address the concerns of local residents, including providing a program of financial compensation for residents located near the project who wished to relocate, a compensation program for those who might sustain losses in their property values and compensation for residents whose insurance premiums might rise due to the project. The Rabaska JRP further

726 Pliego ER1, ¶ 337; Pliego ER2, ¶¶ 19, 22, 108.

727 Pliego ER1, ¶ 337; Pliego ER2, ¶ 108.

728 Claimant's Memorial, ¶¶ 329-347.

729 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶ 694.

730 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 700, 704, 707-708, 735.

731 **CL-0122**, *William Ralph Clayton, Douglas Clayton, Daniel Clayton and Bilcon of Delaware, Inc. v. Government of Canada* (UNCITRAL) Award on Jurisdiction and Liability, 17 March 2015, ¶¶ 707-708 (emphasis added).

> proposed ongoing requirements on the proponent to inform and meet with the public.
>
> The Rabaska JRP in the end found that the project, after mitigation, would have no likely significant adverse effects. **It is not the particular outcome on the facts, however, that is the basis for a finding in this Award of less favorable treatment for Bilcon's project; it is the fact that the Rabaska JRP followed the legally required standard in carrying out and reporting its assessment**.

305. Here, all of the other projects were more favorably evaluated. As Mr. Pliego concludes, "if SEMARNAT had evaluated the Don Diego Project under the same level of scrutiny of these other projects and in accordance with its usual approach, it would have approved the Project, on the condition of the implementation of the mitigation measures proposed by ExO."[732] SEMARNAT did not do so.

306. It is all the more striking, in this regard, that five of the six comparators were actually situated within areas covered by special declarations of biodiversity conservation. This was in marked contrast to the Don Diego Project, which would not have been conducted in a protected natural area.[733]

307. Moreover, as Claimant explains in its Memorial, SEMARNAT's less favorable treatment is particularly evident with respect to the evaluation of the possible impacts to sea turtles and other NOM-059 species, impact to the seabed, impact to the water column, and evaluation of mitigation measures.[734]

a. ExO Received Disparate Treatment with Respect to the Evaluation of Possible Impacts on Sea Turtles and Other NOM-059 Species

308. ExO received disparate treatment from SEMARNAT with respect to the Project's possible impact on turtles, as evinced in the conditions imposed by SEMARNAT in granting conditional approval to the comparable projects.[735] As previously explained, the basis of SEMARNAT's Denial is the Project's purportedly intolerable effect on *Caretta caretta,*

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732 Pliego ER1, ¶ 28.

733 Pliego ER1, ¶¶ 239-240, 249, 255, 263, 272; Pliego ER2, ¶¶ 20-21, 86, 111-112, 119.

734 Claimant's Memorial, ¶¶ 329-347.

735 Pliego ER1, ¶ 360.

despite the evidence that the species was not present in the dredging area and the mitigation and protection measures proposed by ExO notwithstanding this fact.

309. In contrast, the Veracruz Project contemplated the removal of *Acropora palmata*—a species of coral listed on NOM-059—and it was generally acknowledged that the reef system in the project area would be critically affected by the project.[736] Worse still, by destroying the reefs, the project would have destroyed the acknowledged habitat of the *Eretmochelys imbricata* turtle, which is listed in NOM-059 and is classified as critically endangered by the World Conservation Union.[737] This was one of the reasons why CONABIO's technical opinion considered the project not viable.[738]

310. *Caretta caretta*, on the other hand, is considered vulnerable, which is two risk categories below critically endangered.[739] Yet SEMARNAT denied the Don Diego Project and approved the other projects, including the Veracruz Project. As Mr. Pliego points out, "approving a dredging project in which affecting the habitat of a critically endangered sea turtle is a certainty, and not approving a project in which there is a supposed, indirect, unproven effect in the habitat of a 'vulnerable' sea turtle cannot be, under any point of view, the application of the same environmental criteria to two comparable dredging projects."[740]

311. Another example of disparate treatment concerns the turtle mitigation and protection measures proposed for the Don Diego Project that SEMARNAT would ultimately dismiss as insufficient, notwithstanding the fact that none of the comparator projects presented any such measures even though they were much more likely to affect sea turtles.

312. For example, SEMARNAT's conditional approval of the ESSA Project noted the potential effect on sea turtles.[741] But SEMARNAT did not even issue a conditional approval requiring turtle protection measures, apparently based on the sponsor's assertion that,

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736 Pliego ER1, ¶ 363; Pliego ER2, ¶¶ 149-155.
737 *See* Pliego ER1, ¶ 364; *see also* Pliego ER2, ¶¶ 156-157.
738 Pliego ER2, ¶ 167; **C-0119**, Veracruz Resolution, 13 November 2013, p. 102.
739 Pliego ER2, ¶ 156.
740 Pliego ER2, ¶ 157.
741 Pliego ER2, ¶¶ 133-137; **C-0104**, ESSA Resolution, 19 May 2008, p. 54.

while dredging could affect turtles or marine mammals, no incidents had been reported.[742]

313. The sponsor of the Sayulita Project claimed that turtle nesting zones would not be affected because the works "would only take place in the zone of the beach and in a minimal area."[743] In approving that project, SEMARNAT did not address how the beach, which is a nesting ground for four types of endangered sea turtles, would be protected.[744] Nor did it require a turtle protection program.[745]

314. With respect to the Santa Rosalía Project, Mr. Pliego points out that CONABIO's literature reports sightings of *Caretta caretta* individuals in the dredging area, a fact that is not discussed in SEMARNAT's resolution.[746] In fact, SEMARNAT only mentions *Chelonia mydas*, and even in that case, it does not establish conditions to prevent impacts to that species.[747]

315. The Laguna Verde and Matamoros Projects also affected sea turtles. The former project dredged a nesting area for *Chelonia mydas* and *Lepidochelys kempii*, and the latter had the potential to affect the same.[748] CONABIO also considered the Matamoros Project not environmentally viable.[749] Yet SEMARNAT authorized both projects on the condition that the sponsors present mitigation programs for protecting sea turtles.[750]

b. ExO Received Disparate Treatment with Respect to the Evaluation of Seabed Impact

316. While it is clear that all dredging projects must have some impact on the seabed, "only the denial decision for the Don Diego Project questions the timing or capacity of the benthic organisms to rapidly recolonize the dredge area."[751]

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742 Pliego ER1, ¶ 367.
743 **C-0116**, Sayulita Resolution, 26 April 2018, p. 21.
744 Pliego ER1, ¶ 368; Pliego ER2, ¶¶ 145-146.
745 Pliego ER1, ¶ 368; Pliego ER2, ¶ 146.
746 Pliego ER1, ¶ 369.
747 Pliego ER1, ¶ 369.
748 Pliego ER1, ¶¶ 370-371.
749 **C-0130**, Matamoros Resolution, 3 September 2015, p. 127.
750 Pliego ER1, ¶¶ 370-371; Pliego ER2, ¶¶ 139, 142, 172, 175.
751 Pliego ER1, ¶ 373.

317. For the ESSA, Laguna Verde, and Santa Rosalía Projects, their respective resolutions indicate that SEMARNAT was willing to accept that benthic organisms in dredged areas could recover quickly.[752] SEMARNAT's resolution for the Veracruz Project does not even analyze how benthic organisms would be affected by dredging, while the Sayulita Project resolution does not even discuss the effect of dredging on the seabed.[753] The Don Diego Project was treated entirely differently.

c. ExO Received Disparate Treatment with Respect to the Evaluation of Impact to the Water Column

318. One of the reasons cited by SEMARNAT to justify the denial of ExO's MIA is the incorrect affirmation that "no remediation action can be applied to water columns."[754] This claim is simply false. ExO was going to altogether avoid most potential impacts on the water column by using the Eco-tube for the Project.[755] Other remediation measures exist, too, such as hydraulic equipment and the less effective geotextile net used by other projects.[756] SEMARNAT clearly discriminated against ExO when evaluating this factor. As established *supra*, all of the projects involved shallower—and therefore more sensitive—waters. Nevertheless, in conditionally approving the Laguna Verde Project, SEMARNAT simply noted that the species in the project area were well-represented and could tolerate variations in the suspension of solids in the water column.[757] For the ESSA and Santa Rosalía projects, SEMARNAT noted simply that turbidity would naturally disappear.[758] As for the Veracruz Project, the sponsor never specified how it would achieve a minimum light penetration of 25%, but the project was approved anyway, even though it was located in an area that is more sensitive to sediment suspension.[759]

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752 Pliego ER1, ¶¶ 374-375.

753 Pliego ER1, ¶ 374.

754 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 508. It should also be noted that this conclusion by SEMARNAT was wrongly adopted from the literature pertaining to deep sea mining rather than dredging on the continental shelf in shallow waters (like the Don Diego Project would have done).

755 Claimant's Memorial, ¶¶ 77, 125-126, 134(a); Pliego ER1, ¶¶ 336-337; Pliego ER2, ¶ 52.

756 Pliego ER1, ¶ 381.

757 Pliego ER1, ¶ 378.

758 Pliego ER1, ¶¶ 379, 382.

759 Pliego ER1, ¶¶ 352, 380.

d. ExO Received Disparate Treatment with Respect to the Evaluation of Mitigation Measures

319. In issuing the Second Denial, SEMARNAT officials were forced to cast the mitigation measures ExO had proposed as insufficient by incorrectly asserting that those measures had only "provide[d] a general description without clearly indicating the actions to be undertaken in order to define their efficacy . . . ."[760] Further, unlike the approvals of the comparator projects, the 2018 Denial was premised on the logically flawed proposition that offering a mitigation measure is the same as admitting that the Project would have an adverse impact on the environment.[761] Thus, the 2018 Denial provided:[762]

> Proposing mitigation measures with respect to impact over loggerhead turtles shows that the **petitioner** does foresee direct impact over turtle individuals, derived from the dredging activities, which is why, regardless of whether the adverse effect [is] over one single or many individuals, it is clear that in the case of a species classified as endangered[,] any adverse effect deserves special attention, hence the statement made by the **petitioner** [that potential deaths of sea turtles derived from the project are not relevant] is unacceptable.

320. The purpose of the environmental impact assessment process is to identify and designate mitigation measures as project requirements in order to minimize potential effects on the environment. As Mr. Pliego explains, implementing prevention and mitigation measures does not mean that the potential impact will necessarily occur if the measures are absent.[763] On the contrary, a lack of mitigation measures could result in environmental impact that would otherwise have been avoided with mitigation measures in place:[764]

a. The Santa Rosalía Project did not submit any mitigation program and therefore did not tether specific mitigation actions to foreseen impacts, but the project was conditionally approved. SEMARNAT merely required the sponsor to develop

760 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, p. 145.
761 Pliego ER1, ¶ 387.
762 **C-0009**, SEMARNAT Denial Decision, 12 October 2018, pp. 503-504.
763 Pliego ER1, ¶ 387.
764 Pliego ER1, ¶ 388.

general and particular objectives, as well as indicators to measure the success of the mitigation measures.[765]

b. SEMARNAT's approval of the MIA for the Laguna Verde Project did not analyze the possible effect of the dredgers on marine fauna.[766]

c. In the Sayulita Project resolution, despite pointing to generally insufficient mitigation measures, SEMARNAT approves the project while simply advocating for the use of technology that reduces sediment dispersion given that the sponsor did not specify a dredger type.[767]

d. In a similar vein, SEMARNAT approved the Veracruz Project without knowing the precise location of a major component of the project—which meant that it could not have understood its localized impacts.[768]

e. SEMARNAT also conditionally approved the Matamoros Project without any understanding of, and consequently without any mitigation measures designed to address, the impact of the transport of dredged sediment.[769]

321. For ease of reference, the following table produced by Mr. Pliego paints a clear picture of the dissimilar treatment that the Don Diego Project received *vis-à-vis* the other projects:[770]

765 Pliego ER1, ¶ 390.
766 Pliego ER1, ¶ 392.
767 Pliego ER1, ¶ 393.
768 Pliego ER1, ¶ 395.
769 Pliego ER1, ¶ 398.
770 Pliego ER2, Table 1, pp. 7, 40.

Project	Is the project located in a protected natural area?	Is there evidence of protected species in the SAR of the project?	Are there sea turtles in the SAR of the project?	Is there a clear presence of sea turtles in the specific area that will be dredged?	Existence of sea turtle protection programs when the resolution was issued	Additional (AI) or supplementary information (SI) submitted by the project's proponent	Was the project's MIA approved?
Dredging of the Puerto Chaparrito	Yes 1 NPA (Natural Protected Area) and 3 Designations	Yes	Yes 5 species, including *Caretta caretta*	Yes	No	No	Yes
Laguna Verde, Veracruz	No	Yes	Yes 2 species	Yes	No	No	Yes
Integral Sanitation System Sayulita, Nayarit	Yes 1 NPA	Yes	Yes 5 species	Yes	No	Yes (AI)	Yes
Extension of the Puerto de Veracruz	Yes 1 NPA and 1 Designation	Yes	Yes 4 species, including *Caretta caretta*	Yes	No	Yes (AI)	Yes
Puerto de Matamoros, Tamaulipas	Yes 1 NPA and 1 Designation	Yes	Yes 2 species	Yes	No	Yes (SI)	Yes
Puerto de Santa Rosalía, BCS	Yes 1 NPA	Yes	Yes 2 species, including *Caretta caretta*	Yes	No	Yes (AI)	Yes
Don Diego	No	Yes	Yes	No	Yes	Yes (AI and SI)	No

V. ODYSSEY IS ENTITLED TO FULL COMPENSATION FOR THE LOSSES IT SUFFERED DUE TO RESPONDENT'S NAFTA BREACHES

322. There is no dispute that the appropriate standard for compensation is ExO's FMV at the time of expropriation. Mexico itself accepts the *Chorzów Factory* full reparation standard and agrees that full reparation requires an award of ExO's (or the Project's) FMV.[771]

323. The quantum aspect of this dispute centers on what is the Project's FMV. Compass Lexecon has determined the Project's FMV using well-established valuation methodologies and bases it on substantial evidence. That evidence encompasses numerous contemporaneous documents, including a NI 43-101 Technical Report authored by a renowned phosphate QP (Mr. Henry Lamb). Additionally, Compass Lexecon's valuation is supported by expert reports of world-leading industry technical experts in dredging and offshore mineral projects (Drs. Ian Selby and Colm Sheehan), phosphate processing (Mr. Glenn Gruber), structural engineering (Mr. David Fuller), and phosphate markets (CRU).[772] The expert reports and NI 43-101 Technical Report, in turn, are based on data and information that was known as of the Valuation Date, including the testimony of witnesses such as the engineering Project Manager and lead mining engineer, Mr. Bryson.

324. That evidence proves, among other things:

- A robust NI 43-101 Technical Report, based on [redacted] core samples taken from the seabed inside the Don Diego Concession and independently tested by a major phosphate research laboratory, conservatively established a world class Mineral Resource of 494 million tonnes of high quality, uniform, and continuous unconsolidated phosphate sands lying exposed or nearly exposed at the sea floor surface;[773]

- One of the largest and most experienced marine contractors in the world, Boskalis,[774] joined the Project as Odyssey's contractor, working with Mr. Bryson over the course of nearly three years to refine the engineering configuration for

771 Respondent's Counter-Memorial, ¶¶ 628-633.

772 A brief summary of the experts' backgrounds and expertise can be found in Claimant's Memorial, ¶ 355.

773 *See* **C-0084,** Henry Lamb, NI 43-101 Technical Report, 30 June 2014. *See also* Agrifos ER, ¶¶ 25-27, 69; Selby ER1, ¶¶ 63-85; Selby ER2, ¶¶ 45-81.

774 *See, e.g.*, Bryson WS1, ¶¶ 28-40; Selby ER1, ¶¶ 91-92; ADBP ER, pp. 3, 6; Lomond & Hill ER2, ¶¶ 4.8; Selby ER2, ¶¶ 95-97.

the dredging and offshore processing of the resource to a Pre-Feasibility Study ("**PFS**") standard,[775] as confirmed by the independent industry technical experts;[776]

- The engineering solution used exclusively commercial off-the-shelf technology with basic mechanical processes that have been known and applied for over a century, and which offered highly predictable performance in terms of processing rates, capital, and operating costs and de-risking;[777]

- The offshore context provided substantial cost savings when compared to terrestrial phosphate projects,[778] making the Don Diego Project among the lowest-cost phosphate rock producers in the world;[779]

- Chemical testing of the resource demonstrated that it was ideally suited for use in standard commercial phosphate applications, including the manufacture of phosphoric acid for use in industrially-produced fertilizer;[780] and

- The cost and geographic profile of the Don Diego Project made it not only commercially viable, but a very attractive supplier of commercial phosphate rock products, as confirmed not only by the global leaders in phosphate market

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775 Bryson WS1, ¶¶ 41-217.

776 *See, e.g.*, Selby ER1, ¶¶ 85 (the "volume estimation and classification of the Don Diego resources" are at "a PFS confidence level"); 132 ("conservative assumptions [. . .] have been adopted for the calculation, which would meet the standard required for a PFS"); ADBP ER, pp. 4 ("[b]ased on the production variables assumed (e.g. volume per load, cycle time) the direct costs developed are reasonable and in line with market rates for a Pre-Feasibility Study (PFS)-level assessment"), 5 ("the high level of confidence in these figures would meet the industry standard for a PFS"); Gruber ER1, p.1 ("the block flow diagrams, material balances, and process descriptions prepared as part of the Process Study are prefeasibility level"); Lomond & Hill ER1, p.5 ("the Odyssey CAPEX estimates can be best characterized as Class 4 AACE estimates," as are "typically prepared for Prefeasibility Studies"). *See also* Geostatistics Expert Report of Mining Plus, 29 June 2021 ("MP Geostatistics ER"), p.50 ("The quality of geological understanding and P_2O_5 grade continuity at the Don Diego deposit is appropriate for future resources that could be classified as Indicated and Measured to sufficiently support reserve conversion in a Pre-Feasibility Study (PFS), as defined in the CIM guidelines"); Lomond & Hill ER2, ¶¶ 5.2 (cost estimate "equates to a PFS level"); Selby ER2, ¶¶ 111 ("the production and financial estimates would meet the standard required for a PFS"), 112 ("the studies supporting the Don Diego project were realistic and at a PFS confidence level").

777 Selby ER1, ¶¶ 101; Lomond & Hill ER2, ¶¶ 3.1-3.7; Gruber ER2, pp. 10-11; Selby ER2, ¶¶ 95-97.

778 Bryson WS1, ¶¶ 16-24; Lomond & Hill ER2, ¶ 5.3.

779 Heffernan ER1, p.3 [redacted]

780 **C-0469**, Jacobs Engineering, Bench Scale Phosphoric Acid Pilot Plant Testing, May 19, 2015; **C-0345**, QP E-mail and letter to PEMEX on suitability for Fertinal, 11 March 2016; Gordon WS2, ¶¶ 4-39; Gruber ER2, pp. 9-10.

analysis, CRU,[781] but also by the strong and continued interest of financiers, investors, and phosphate market players, including PEMEX and Fertinal.[782]

325. Instead of engaging with Claimant's voluminous evidence and testimony about the Project's stage, costs, and technical feasibility, Respondent has adopted a "strawman" approach. Its Counter-Memorial and its experts shut their eyes to the evidence that Claimant has adduced, repeatedly mischaracterize Claimant's position, and answer arguments that Claimant never advanced. The result is a series of general contentions that misapply legal and industry standards and ignore the reality that this Project was at a significantly more advanced stage than Mexico seeks to portray.

326. Mexico's mining and geological expert, WGM, opines with general, sweeping statements on every technical topic at issue, including dredging, marine resource analysis and development, and offshore processing, and even offers its own phosphate market analysis. This is despite having no apparent expertise or experience in any of these fields. WGM disputes Mr. Lamb's classification of Mineral Resources, but admits it has not reviewed the drilling data and that further analysis was outside its scope of work.[783] It claims repeatedly that the Don Diego Project uses "novel" and "unproven" technology, but fails to identify even a single example (because there is none). Its phosphate market analysis disregards the industry benchmark price. And, critically, Claimant's evidence of production feasibility and cost-effectiveness is not just unrefuted; it is not even addressed.[784]

327. Mexico's valuation expert, Quadrant, fares no better. First, it builds its argument that a DCF is inappropriate on top of WGM's house of cards. In so doing, Quadrant fundamentally misapprehends the Project's development stage, and this renders the remainder of its points ineffectual. Then, it contrives a lowball valuation using the market approach based on arguments that are conceptually wrong, factually incorrect, and, at

781 Heffernan ER1, pp. 2-3, 77-85; Heffernan ER2, pp. 19-22.

782 Gordon WS, ¶¶ 58-67; Gordon WS2, ¶¶ 4-39; Gruber ER2, pp. 7-10.

783 WGM ER, ¶ 59.

784 The time for Mexico to answer and engage with this evidence was in its Counter-Memorial. Mexico should not be permitted to attempt to rebut this part of Claimant's case in future submissions.

times, fanciful. Its valuation is driven by Quadrant's thesis that Odyssey's share price rose in March 2016 and fell on 11 April 2016—not because during this period investors expected SEMARNAT to issue a decision on the MIA and were disappointed when that decision was negative—but because of the market "buzz" created by a television series that ran on the History Channel about a notorious failed treasure hunter, and a supposed letdown that came when the series ended. Notably, Odyssey was not even mentioned in that program. Quadrant's supposed "proof" boils down to three online posts: the first in an online local newspaper; the second in a forum for scuba diving enthusiasts; and the third in an online magazine covering popular culture called "Talk Nerdy With Us."[785]

328. Ultimately, Respondent's answer to Claimant's quantum case is an empty shell. The evidentiary record—most of which Mexico chooses to ignore—establishes that the Don Diego Project's FMV can and should be determined using a discounted cash flow ("**DCF**") analysis (an income approach) consistent with mining industry guidelines and how real market participants would value the Project. As discussed below and explained more fully in its accompanying rebuttal report, Compass Lexecon has carefully considered Quadrant's criticisms, but it has not changed its approach or conclusions. Using the DCF method, Compass Lexecon calculates the FMV of the Don Diego Project of [redacted].

329. As discussed in Section V.G below, to corroborate the DCF that Compass Lexecon calculated, Claimant engaged Agrifos Partners LLC ("**Agrifos**")[786] to estimate the value of the Project using a market comparable approach. Agrifos evaluated nine comparable companies and public transactions and calculated the value of the underlying phosphate resource implied in the transaction or market capitalization, expressed as US$/mt of contained P_2O_5.[787] It next considered the project characteristics of each comparable project and Don Diego, concluding that Don Diego would be valued in the range of [redacted]

785 Quadrant ER, ¶¶ 55-58.

786 Founded in 1995, Agrifos is a business consultancy that specializes in opportunistic M&A and business and project development activities in the fertilizer production sector, with a strong focus on phosphates. Expert Report of Agrifos Partners LLC, dated 29 June 2021 ("**Agrifos ER**"), Annex A.

787 Agrifos ER, ¶ 13.

[redacted] of contained P_2O_5.[788] To arrive at the Project's aggregate value, Agrifos used Mr. Lamb's estimate of [redacted] This then resulted in an estimated value of [redacted] for the Project and corroborates the reasonability of the DCF.[789]

330. Two aspects of valuing the Project are not captured by Compass Lexecon's DCF. The first is the Project's strategic value because of its low-cost profile, world class multi-generational resource, and location in western North America, with easy, unobstructed access to all Pacific Rim markets. The second is the lost opportunity to further explore and develop the vast, homogenous Don Diego deposit. As discussed in further detail below, full reparation also requires that these heads of loss be awarded.

331. Finally, full reparation also requires an award of pre-award compound interest based on the WACC (weighted average cost of capital), reflecting the financing costs incurred by a typical pre-operational mining project in Mexico. As discussed below, the approach taken by Quadrant is under-compensatory and uneconomic.

332. Taking into account Compass Lexecon's updated DCF, Odyssey's estimates of the Project's strategic value, and the value of the lost opportunity to explore and develop the Don Diego deposit, Odyssey estimates its losses as follows:

Claim Category	Value	+ Interest (13.95%) (6.30.2021)
Compass Fair Market Value: (Gross of Taxes)	[redacted]	[redacted]
Compass Fair Market Value: (Net of Taxes)	[redacted]	[redacted]
Strategic Value:	[redacted]	[redacted]
Value of Lost Opportunity:	[redacted]	[redacted]
Total (Net of Taxes)	$1,065.4M	$2,103.3M
Total (Gross of Taxes):	**$1,355.0M**	**$2,676.3M**

788 Agrifos ER, ¶ 21.

789 Agrifos ER, ¶¶ 21, 68, 70.

333. The remainder of this section responds to Mexico's submissions on quantum and the reports of its experts, WGM and Quadrant.

A. Odyssey Has Met Its Burden of Proof and Established That Mexico Caused the Damages Suffered

334. The burden of proof is not borne exclusively by a claimant in any case: the general rule is that the party alleging a fact bears the burden of proving it.[790] Although Respondent is correct to observe that Odyssey has the burden of proving the damages it and ExO have suffered as a result of Mexico's NAFTA breaches,[791] it fails to acknowledge that *Respondent* has the burden of proving the factual allegations it has made in asserting its defense to Odyssey's claims for compensation. In other words, "the burden of proof will rest with the respondent if the latter asserts facts (or, in procedural terms, raises a defence) implying full or partial rejection of the claim for compensation."[792]

335. The standard of proof is the balance of probabilities.[793] Odyssey has proven that Mexico's NAFTA breaches were the proximate cause of its losses. It was objectively foreseeable that if SEMARNAT denied the MIA, Odyssey would be unable to exploit the Concession and would experience a complete loss for both ExO, its special purpose vehicle to develop and operate the Don Diego Project, and the Don Diego Project itself.[794]

336. None of the arguments Mexico advances in paragraph 663 of its Counter-Memorial bears on the causal link between Mexico's wrongful acts and ExO's inability to exploit its

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790 **CL-0101,** S. Ripinsky and K. Williams, *Damages in International Investment Law* (2008), p. 161.

791 Respondent's Counter-Memorial, ¶ 627.

792 **CL-0101,** S. Ripinsky and K. Williams, *Damages in International Investment Law* (2008), p. 162; **CL-0112**, *Técnicas Medioambientales Tecmed S.A. v. The United Mexican States* (ICSID Case No. ARB (AF)/00/2) Award, 29 May 2003, ¶ 190.

793 **CL-0169**, *Ioannis Kardassopoulos and Ron Fuchs v. The Republic of Georgia* (ICSID Case Nos. ARB/05/18 and ARB/07/15) Award, 3 March 2010, ¶ 229; **CL-0167**, *Impregilo S.p.A. v. Argentine Republic* (ICSID Case no. ARB/07/17) Award, 21 June 2011, ¶ 371; **CL-0189**, *Suez, Sociedad General de Aguas de Barcelona S.A., and Vivendi Universal S.A. v. The Argentine Republic (II)* (ICSID Case No. ARB/03/19) Award, 9 April 2015, ¶ 30.

794 **CL-0022,** *Burlington Resources Inc. v. Republic of Ecuador* (ICSID Case No. ARB/08/05) Decision on Reconsideration and Award, 7 February 2017, ¶ 333 (discussing foreseeability as a central inquiry for causation); **CL-0065**, *Joseph Charles Lemire v. Ukraine* (ICSID Case No. ARB/06/18) Award, ¶ 170 (explaining that the causal chain looks to the "related concepts" of proximity and foreseeability: "a chain of causality must be deemed proximate, if the wrongdoer could have foreseen that through successive links the irregular acts finally would lead to the damage").

valuable Concession rights. Rather, if they had merit at all (which is denied), they would be relevant to the amount of compensation owed, consistent with the principle of full reparation.[795]

a. Respondent's general observation that other offshore phosphate deposits have not entered into commercial production, for example, says nothing about the causal link between Mexico's denial of the MIA and the destruction of Claimant's investment. As discussed in paragraphs 460 to 465 below, Chatham Rise and Sandpiper are fundamentally different projects. They have not gone forward for reasons unique to those projects (none of which are at issue in Don Diego).

b. Mexico's argument that the Concession does not confer legal ownership over the phosphate until it is extracted also misses its mark.[796] As Mexico concedes, a concession gives the concession holder the exclusive right to "exploit[], use and utilize[e]" the mineral resources for the duration of the concession's term.[797] Mr. Kunz further explains that those rights—to explore, exploit, and economically benefit from the resources covered by the concession—have real economic value.[798] It is thus unsurprising that mining concessions and the rights granted under them are intangible assets frequently sold for significant amounts of money.[799]

c. Mr. Kunz also explains that the MIA was the foundational, gateway permit.[800] Once SEMARNAT granted the MIA, the other permits would naturally follow.[801] Indeed, the *ratio juris* of the of all other post-MIA permits is the same one animating the MIA authorization, *i.e*. environmental protection.[802] Moreover, other than two permits issued by the Secretariat of the Navy,[803] the rest were

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795 For instance, Respondent's baseless contention that the Project was in the early exploration stage would, if accepted, affect the amount of damages suffered, but it does not negate the fact that Odyssey and ExO suffered damages when SEMARNAT denied the MIA in breach of NAFTA. Likewise, Respondent's claim regarding phosphate market size may be relevant to amount of loss suffered by ExO, but not its existence. Moreover, in his first and second export reports, Dr. Heffernan explains that a market for Don Diego phosphate rock products exist and that Don Diego would be highly competitive. Heffernan ER1, pp.77-85; Second Expert Report of Dr. Peter Heffernan, dated 29 June 2021 ("**Heffernan ER2**"), pp.17-22.

796 Respondent's Counter-Memorial, ¶¶ 113, 663.

797 Respondent's Counter-Memorial, ¶ 113.

798 Kunz ER1, ¶¶ 17-19; Kunz ER2, ¶¶ 4-12.

799 Kunz ER1, ¶¶ 15-17; Kunz ER2, ¶¶ 9-10.

800 Kunz ER1, ¶ 10; Kunz ER2, ¶ 16.

801 Had SEMARNAT issued the MIA, it was foreseeable that the other permits would have been issued almost with certainty, and therefore, ExO could have commenced exploiting the Don Diego deposit. This means that the initial breach by Mexico (arbitrarily denying the MIA) resulted "through a foreseeable and proximate chain of events, in the damages suffered by the investor." **CL-0065***, Joseph Charles Lemire v. Ukraine* (ICSID Case No. ARB/06/18) Award, 28 March 2011*,* ¶ 252.

802 Kunz ER1, ¶ 10; Kunz ER2, ¶ 16.

803 The *ratio juris* of the two post-MIA permits issued by the Secretariat of the Navy is also environmental protection. Kunz ER2, ¶¶ 16, 24-27.

within the purview of government agencies that are part of SEMARNAT.[804] It would have been inconceivable for SEMARNAT to approve the MIA without taking into account the environmental concerns that the other permits were aimed at preventing. Finally, as Mr. Kunz confirms, ExO's MIA addressed compliance with the applicable environmental regulations, including those related to the post-MIA permits in question.[805] Accordingly, once the MIA was approved, it would have been certain that all other permits would have been granted, too, as there would have been no legal basis to deny them.[806]

d. As for Odyssey's personal expertise, the FMV is based on the Project's intrinsic characteristics, reflecting what a hypothetical willing purchaser would pay for the project at arm's length, not on Odyssey's ability to develop and exploit the deposit. In any event, Mexico ignores that the Project team was led by Mr. Bryson, who has over 20 years' experience in designing, implementing, and managing both terrestrial mines and marine mineral projects,[807] and that Boskalis was to serve as Odyssey's dredging and operations contractor.[808]

337. Odyssey is not required to establish the amount of damages claimed with 100% certainty.[809] Tribunals have repeatedly emphasized that "the fact that damages cannot be fixed with certainty is no reason not to award damages when a loss has been incurred. In such cases, approximations are inevitable; the settling of damages in not an exact science."[810] As the *Gemplus* tribunal explained, proving the amount of damages "is not

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804 Kunz ER2, ¶ 22. It should be noted that while Mexico refers to other state and municipal permits (Respondent's Counter-Memorial, ¶ 109), these would not be required for a project like Don Diego which takes place in Mexico's EEZ and thus is entirely under federal jurisdiction. (Kunz ER2, ¶¶ 32-33.) Similarly, another permit referenced by SOLCARGO, one for the non-extractive use of wildlife (SOLCARGO ER, ¶¶ 244-246), would not be required for the Don Diego Project. (Kunz ER2, ¶ 30.)

805 Kunz ER2 ¶¶ 20-21. S*ee also* **C-0002**, MIA, 21 August 2015, pp. 141-145, 148-157, 164-166, 166-169, 170-171, 171-176.

806 Kunz ER1, ¶ 10; Kunz ER2, ¶ 16.

807 Bryson WS1, ¶ 2.

808 Gordon WS1, ¶¶ 52-54; [redacted] Bryson WS, ¶¶ 2, 40.

809 **CL-0065**, *Joseph Charles Lemire v. Ukraine* (ICSID Case No. ARB/06/18) Award, 28 March 2011, ¶ 246 ("Once causation has been established, and it has been praoven that the *in bonis* party has indeed suffered a loss, less certainty is required in proof of the actual amount of damages; for this latter determination Claimant only needs to provide a basis upon which the Tribunal can, with reasonable confidence, estimate the extent of the loss.").

810 **CL-0037**, *Compañia de Aguas del Aconquija S.A. and Vivendi Universal S.A. v. Argentine Republic* (ICSID Case No. ARB/97/3) Award, 20 August 2007, ¶ 8.3.16; **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014, ¶¶ 685-686; **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶¶ 865-876; **CL-0116**, *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case No. ARB/12/1) Award, 12 July 2019*;* **CL-0187**, *Southern Pacific Properties (Middle East) Limited v. Arab*

therefore an exercise in certainty, as such, but . . . an exercise in 'sufficient certainty.'"[811] The standard of proof is thus satisfied when a tribunal is "able to admit with sufficient probability the existence and extent of the damage."[812]

338. In *Gold Reserve*, the tribunal similarly recognized that while a claimant must prove its damages to the required standard, "the assessment of damages is often a difficult exercise and it is seldom that damages in an investment situation will be able to be established with scientific certainty."[813] The tribunal further observed that assessments involve "some degree of estimation and the weighing of competing (but equally legitimate) facts, valuation methods and opinions, which does not of itself mean that the burden of proof has not been satisfied."[814]

339. Odyssey has met its burden. As demonstrated in the Sections that follow, its Memorial,[815] and the expert reports that accompany its Memorial and this Reply, Odyssey has provided ample proof of its damages. This proof consists of the contemporaneous Project information and data that would have been available to a willing buyer as of the Date of Valuation.[816] This information and data is not limited to [redacted], as

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Republic of Egypt (ICSID Case No. ARB/84/3) Award on the Merits, 20 May 1992, ¶ 215 ("[I]t is well settled that the fact that damages cannot be assessed with certainty is no reason not to award damages when a loss has been incurred.").

811 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-91.

812 **CL-0185**, *Sapphire International Petroleums Ltd. v. National Iranian Oil Company* (Ad hoc Arbitration) Arbitral Award, 15 March 1963, ¶ 15.

813 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶ 686.

814 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶ 686.

815 Claimant's Memorial, Section V and evidence discussed therein.

816 Among other things, this includes: (i) an extensive NI-43-101 Technical Report that synthesizes [redacted] core sample tests, including chemical assays, flotation tests, and acidulation tests into a compelling declaration of a vast and homogenous Mineral Resource (*see* **C-0084,** Henry Lamb, NI 43-101 Technical Report, 30 June 2014); (ii) the underlying data, including geolocations [redacted] drill holes and core sample assay results generated by the well-known independent laboratories of the Florida Institute for Phosphate Research ("**FIPR**"), all of which were validated as providing robust data by the international mining consultancy Mining Plus ("**MP**"), (*see* Geostatistics Expert Report of Mining Plus, 29 June 2021 ("**MP Geostatistics ER**"), Appendix A (data sheets) and High-Grade Resource (HGR) Modelling Expert Report of Mining Plus, 29 June 2021 ("**MP HGR ER**"), Appendix A (data sheets)), plus additional test results that post-dated the NI-43-101 Technical Report, including acidulation tests (*see, e.g.*, **C-0469**, Jacobs Engineering, Bench Scale Phosphoric Acid Pilot Plant Testing, May 19, 2015); (iii) extensive engineering proposals, plans,

Respondent disingenuously suggests.[817] Nor is there a legal requirement that this data and information be bundled into a single study or report. Any prospective buyer would have evaluated all of the relevant data during due diligence for the transaction, and that is the approach Compass Lexecon followed in valuing the Project.[818]

340. Respondent also must not be permitted to benefit from the fact that its conduct prevented Odyssey from reducing the Project data, information, and analysis to a formal pre-feasibility study. As the *Gemplus* tribunal cautioned, to do so would only add to the injury: a state cannot "invoke the burden of proof as to the amount of compensation for such a loss to the extent that it would compound the respondent's wrongs and unfairly defeat the claimant's claim for compensation."[819]

B. The Valuation Date Is 7 April 2016

341. In its Counter-Memorial, Mexico asserts that the Valuation Date should be 6 April 2016 and that the valuation should assume that the decision on the MIA was still pending.[820] This assertion is misconceived on several levels. First, Mexico's position completely sidesteps Odyssey's case; namely, that Mexico's Denial of the MIA was a wrongful act in breach of NAFTA Articles 1105, 1110, and 1102. The objective of compensation under

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flowsheets, and tests demonstrating the feasibility of the Project, such as Boskalis's engineering work (*see* (*e.g.*, **C-0059**, Boskalis Phosphate Mining Proposal, 28 May 2013; **C-0061**, Laboratory Reports, 28 May 2013; **C-0062**, Flow Diagram, 28 May 2013; **C-0063**, Separation Plant Engineering Drawing, 28 May 2013; **C-0064** and **C-0065**, Mass Flow Diagrams, 28 May 2013; **C-0087**, Boskalis, Don Diego Gravity Drying Test Results, 18 June 2014; and **C-0105**, Boskalis Don Diego Phosphate Mining Executive Summary of Optimization, 25 February 2015); (iv) resource analysis and estimates, flow sheet design, and cost proposals and analyses from key project optimizations (*e.g.*, **C-0112**, H. Lamb Report, "Technical Memo: Preliminary Assessment of the Potential to Produce a Sized Phosphate Rock Product," 14 May 2015; **C-0114**, Flowchart by AHMSA Mining Engineer Jorge Ordonez, 18 June 2015; **C-0120**, CAPEX/OPEX estimate updates from Boskalis, 16 July 2015; **C-0203**,Transport Cost Analysis for Marine Phosphates, March 2014; **C-0223**, Don Diego West Resource Estimate With Northern Extension, 21 August 2014); and (v) mine planning and processing work by mining engineers and economists (*e.g.*, **C-0201**, Mining Resource Model, February 2014; **C-0205**, Jorge Ordoñez Don Diego Expectations Chart, 19 May 2015).

817 Respondent's Counter-Memorial, ¶ 655.

818 Compass Lexecon ER1, ¶ 7; Lomond & Hill ER2, ¶ 6.17; Agrifos ER, ¶ 9 ("It would, for example, be typical practice for a prospective purchase of a mine to engage its own experts to review resource estimations; that work might well extend to additional detailed resource modeling based on available information.").

819 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-92.

820 Respondent's Counter-Memorial, ¶ 638.

the full reparation standard is to "reestablish the situation which would, in all probability, have existed if that act had not been committed."[821] Consequently, because Denial of the MIA is the wrongful act, the valuation must assume that the MIA was granted in the but for scenario, regardless of the Valuation Date that is used.

342. Second, the reason for fixing the valuation date at the moment immediately before a state's wrongful act is to ensure that the value of the investment is not reduced by those acts.[822] Accordingly, both the Memorial and Compass Lexecon use 7 April 2016 as the Valuation Date for determining the FMV of Odyssey's investments. This is the date on which ExO received SEMARNAT's First Denial[823] and four days before news of the Denial became public.[824]

C. A Forward-Looking Income Valuation Approach Is the Right Methodology to Calculate the Project's Fair Market Value

1. Investor-State Awards Recognize That a Forward-Looking Income Valuation Method Is Appropriate for Pre-Production Properties Like Don Diego

343. Citing a series of inapposite investment treaty cases, Mexico contends that a DCF valuation cannot be used for an investment like Don Diego, which has not yet commenced commercial operation, on the grounds that it lacks a "sufficient track record of profitable operations to reliably project cash flows."[825] This argument relies on gross generalizations and is wrong on a number of levels.

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821 **CL-0029**, *Case Concerning Rights of Minorities in the factory of Chorzów (Germany v. Poland*) (PCIJ) Judgment, 13 September 1928, p. 47.

822 *See, e.g.,* **CL-0169,** *Ioannis Kardassopoulos and Ron Fuchs v. The Republic of Georgia* (ICSID Case Nos. ARB/05/18 and ARB/07/15) Award, 3 March 2010, ¶ 517 (setting valuation date prior to expropriation decree "to ensure full reparation and to avoid any diminution of value attributable to the State's conduct leading up to the expropriation").

823 **C-0008**, SEMARNAT Denial Decision, 7 April 2016; Lozano WS1, ¶ 72.

824 **C-0410,** Odyssey Press Release: "Odyssey Marine Exploration Responds to Decision on 'Don Diego' Project," 11 April 2016.

825 Respondent's Counter-Memorial, ¶ 645.

344. First, the cases are fact-specific; arbitral tribunals have recognized that non-operating assets can be valued using the DCF method and have awarded damages on that basis.[826] In so doing, their analysis has focused on whether it is reasonably certain that, but for the state's wrongful acts, the asset could have brought goods to market and generated a profit from their sale.[827] This inquiry is necessarily fact-specific, and it is important that the Tribunal read beyond the language excerpted by Mexico in the cases it cites and consider the facts and circumstances that drove those decisions.

345. Second, there is no dispute that the standard for compensation under NAFTA is the FMV of the investment,[828] that is, the price that a hypothetical purchaser would be willing to pay to the seller in circumstances in which each has good information, each desires to maximize its financial gain, and neither is under duress or threat.[829] If a purchaser would have used a DCF to value the Don Diego Project on the Date of Valuation, then there is no basis under NAFTA to reject the use of the DCF method here. Indeed, as explained by

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826 *See, e.g.*, **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014, ¶ 829-832*;* **CL-0098**, *Rumeli Telekom A.S. and Telsim Mobil Telekomikasyon Hizmelteri A.S. v. Republic of Kazakhstan* (ICSID Case No. ARB/05/16) Award, 29 July 2008, ¶¶ 809-811; **CL-0181**, *Phillips Petroleum Company Iran v. The Islamic Republic of Iran and the National Iranian Oil Company* (IUSCT Case No. 39) Award, 29 June 1989, ¶ 111.

827 *See, e.g.*, **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014, ¶ 829-832; **CL-0098**, *Rumeli Telekom A.S. and Telsim Mobil Telekomikasyon Hizmelteri A.S. v. Republic of Kazakhstan* (ICSID Case No. ARB/05/16) Award, 29 July 2008*,* ¶¶ 809-811; **CL-0181**, *Phillips Petroleum Company Iran v. The Islamic Republic of Iran and the National Iranian Oil Company* (IUSCT Case No. 39) Award, 29 June 1989, ¶ 111.

828 **CL-0081**, NAFTA*,* art. 1110(2). Respondent agrees that the same standard of compensation applies to breaches of NAFTA Arts. 1102 and 1105: *see* Respondent's Counter-Memorial, ¶¶ 631-632. *See also* Claimant's Memorial, ¶¶ 373-376.

829 **CL-0109**, *Starrett Housing Corporation, Starrett Systems, Inc. and Others v. The Government of the Islamic Republic of Iran, Bank Markazi Iran and Others* (IUSCT Case No. 24) Final Award, 14 August 1987, ¶ 277. *See also* **CL-0114**, *Tenaris S.A. and Talta – Trading e Marketing Sociedade Unipessoal Lda. v. Bolivarian Republic of Venezuela I* (ICSID Case No. ARB/11/26) Award, 29 January 2016, ¶ 557 ("In examining the suitability of the agreed price as an adequate expression of Fair Market Value, the transaction must satisfy at least the following conditions: (a) Both buyer and seller must be willing and able, neither acting under compulsion. (b) The transaction must be at arm's length. (c) The transaction must take place in an open and unrestricted market. (d) Both buyer and seller must have reasonable knowledge of the relevant facts."); **CL-0099**, *Rusoro Mining Ltd. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/12/5) Award, 22 August 2016, ¶ 756 ("The fair market value which the State must pay is that which an innocent, uninformed third party would pay, having no knowledge of the State's pre-expropriation (but post-investment) policy towards the expropriated company and its sector.").

Compass Lexecon, Mr. Fuller, and Agrifos, real market participants routinely use a DCF to value assets like Don Diego, irrespective of their operating history.[830]

346. Third, as discussed below, all of the internationally-accepted guidelines for the valuation of mineral properties expressly endorse forward-looking income valuation methods (like a DCF) for "Development Properties" (like Don Diego) and, in some cases, for "Mineral Resource Properties," as well.[831] This is because once a resource has been discovered and characterized, the drivers of project value can be estimated with a reasonable level of certainty and appropriately adjusted for risk.[832]

347. There is a pivotal difference between valuing a start-up with an unproven business model and an uncertain market outlook and valuing a project in an extractive industry.[833] Economist Manuel A. Abdala explains why: "in the oil and gas sector, neither being a startup company . . . nor lacking a historic record of profitability are serious impediments for using the DCF method in estimating damages. Oil and gas companies derive their primary value on the existence of reserves, and much less so on the ability to develop and extract such reserves and later sell them to the market."[834] Indeed, in the mining and extractive sectors, "there is a strong argument that provided a project has reached the point of economic viability (or with an acceptable degree of certainty would have reached this point absent the wrongful act), and provided the costs and revenues can be estimated with a reasonable degree of certainty, a DCF may be performed which would yield a

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830 Compass Lexecon, Don Diego Project Rebuttal Report, dated 29 June 2001 ("**Compass Lexecon** ER2"), ¶¶ 7, 51; Agrifos ER, ¶¶ 13, 47, 48 ; Lomond & Hill ER2, ¶¶ 6.4-6.6, 6.17.

831 Compass Lexecon ER 2, ¶¶ 43-52; Agrifos ER, ¶¶ 47, 48 ("Real world counterparties in phosphate and other mineral projects, including Agrifos itself, use DCF analyses regardless of CIMVAL or VALMIN guidelines.").

832 **CL-0101,** S. Ripinsky and K. Williams, *Damages in International Investment Law* (2009), pp. 283-284.

833 In asserting that the DCF method cannot be used because ExO was not a "going concern" (Quadrant ER, ¶ 33), Quadrant relies on antiquated World Bank Guidelines, which "are not only contradicted by standard practice, but also by industry valuation associations." (Compass Lexecon ER2, ¶¶ 39-42.) Indeed, Quadrant's assertion is proven wrong by the very mining valuation guidelines it cites elsewhere in the report. (*See* Compass Lexecon ER 2, ¶¶ 43-52.)

834 **CL-0174**, M.A. Abdala, "Key Damage Compensation Issues in Oil and Gas International Arbitration Cases," American University International Law Review 24, no. 3 (2009), pp. 550-551 (emphasis added).

reasonable determination of value."[835] Notably, virtually all of the cases upon which Mexico relies do not involve extractive industries.[836]

348. As for the extractive industry cases Respondent does rely upon,[837] such as *S.A. Silver v. Bolivia*[838] and *Bear Creek v. Peru,*[839] both are obviously distinguishable from the case at hand.

349. First, in *S.A. Silver*, the parties agreed that the project qualified as a mineral resource property under CIMVAL, which meant it had mineral resources but had not been demonstrated to be economically viable in a PFS, feasibility study, or comparable analysis.[840] The experts for the parties agreed, therefore, that a DCF approach to valuation was not appropriate.[841] Thus, unlike the case at hand, Claimant did not assert that a DCF analysis was appropriate, unlike this case, where a DCF is entirely appropriate.[842] Here, Odyssey vigorously disputes Mexico's attempt to reclassify the Don Diego Project as an early exploratory stage property.

350. Second, the mining project in *S.A. Silver* relied upon a novel, unique, and newly-patented hydrometallurgical process to separate out and recover various precious and other metals contained in the sandstone that would be mined.[843] The process had been invented by

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835 **CL-0172**, L. Hardin and C. Milburn, "Valuation of 'Start-Up' Oil and Gas and Mining Projects," The Arbitration Review of the Americas, 7 December 2010, p. 13.

836 *See* Respondent's Counter-Memorial, ¶¶ 644-645. For example, *Gemplus* arose out of the unlawful termination of a first-of-its-kind, private concession to operate a national vehicle registry in Mexico after all previous attempts to establish one had failed. In this context, the tribunal concluded the DCF method was not appropriate because the business was essentially still at the start-up phase; however, it did award damages on a lost opportunity basis. **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-95 to 13-100.

837 Respondent's Counter-Memorial, ¶¶ 683-689.

838 **CL-0108**, *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018.

839 **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017.

840 **CL-0108**, *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶¶ 805-806.

841 **CL-0108,** *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 806.

842 **CL-0108,** *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 814.

843 **CL-0108,** *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 94.

the investor, and claimant's experts recognized that its components had never been combined sequentially in commercial operation, tested at a pilot plant, or tested completely on the minerals that would be mined from the project, but only on synthetic samples.[844] Consequently, the tribunal concluded that there was "no certainty that the Metallurgical Process could work, and, if it worked, what the recovery levels of metals or the cost of the process would be."[845]

351. In contrast, the Don Diego Project uses conventional and proven dredging methods to lift the phosphate sands, and conventional, commercially-available materials processing and handling equipment to separate the phosphate products from the coarse and fine waste.[846] Trying to draw parallels that do not exist, Mexico repeatedly invokes terms like "novel"[847] to describe the Don Diego Project, but neither Mexico nor WGM has actually engaged with the evidence demonstrating that the technology the Project would employ has been used for decades and that the economics are well-established.[848] As Dr. Selby has observed, "mineral sand production by the [dredger] at the volumes proposed in the Don Diego Project is absolutely routine and has been practiced in environments directly comparable to that of the Don Diego Concession for many decades."[849] Mr. Gruber similarly concludes that "[t]he Don Diego production concept mimics technology that was proven over 100 years ago."[850]

352. Also misplaced is Mexico's reliance on the decision in *Bear Creek v. Peru*—where a critical issue was the indigenous communities' rights and whether the mine had a realistic prospect of obtaining the social license it would need to operate and its impact on

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844 **CL-0108,** *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 820.

845 **CL-0108,** *South American Silver Limited (Bermuda) v. The Plurinational State of Bolivia* (PCA Case No. 2013-15) Award, 22 November 2018, ¶ 821.

846 Selby ER1, ¶¶ 36, 132; Gruber ER2, pp. 10, 11; Lomond & Hill, ¶¶ 3.1-3.7.

847 *See, e.g.,* Respondent's Counter-Memorial, ¶ 684.

848 *See, e.g.,* Selby ER1, ¶ 36 ("The Don Diego Phosphorite Project proposes to extract loose, unlithified mineral sand resources lying on the continental shelf at depts of 70-90 metres, using well-established and tested technologies and proven economics.").

849 Selby ER1, ¶ 132.

850 Gruber ER2, pp. 10, 11.

valuation.[851] As this Tribunal will recall, *Bear Creek* centered on the Santa Ana silver mine project a remote area in Peru close to the Bolivian border, which faced strong historical opposition from the indigenous communities,[852] sometimes violent,[853] to the point where, immediately after issuance of Supreme Decree 032 (which was found to constitute an indirect expropriation), Peru issued a general suspension of all new mining concessions in the region for three months, which suspension was then extended.

353. Thus, the widespread and protracted social unrest and the concept of obtaining social license in light of such events were central threads running through the award.[854] It became especially relevant for damages, where the tribunal framed its inquiry as "whether, having regard to the factual circumstances of this case, a willing buyer might have been found who would have paid a price calculated by the DCF method."[855] The tribunal answered this question in the negative, with the decisive criterion being the low likelihood of a social license given the strenuous and violent indigenous opposition. Specifically, the tribunal found there was "little prospect" that "a hypothetical purchaser . . . would have been able to obtain the necessary social license to be able to proceed with the Project, . . . even assuming it had received all necessary environmental and other permits."[856] In sum, the facts of the instant case bear no resemblance to those of *Bear Creek,* where it was "blindingly obvious that the viability and success of [the] project . . . was necessarily dependent on local [communities'] support."[857]

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851 Respondent's Counter-Memorial, ¶¶ 687-689.

852 **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶¶ 152, 172-175, 178, 182, 188-189.

853 **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶¶ 153, 155, 190, 470.

854 *See, e.g.,* **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶¶ 334-335, 400-414, 471-478, 565-569.

855 *See, e.g.,* **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶ 598.

856 **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶¶ 600.

857 **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, Dissenting Opinion, ¶ 6.

354. Mexico's suggestion that *Gold Reserve v. Venezuela*[858] and *Crystallex v. Venezuela*[859] do not support Odyssey's position misses the point of both cases on damages.[860] In *Gold Reserve*, the Brisas project was never a functioning mine, and there was no cash flow history. Nonetheless, both the expert for claimant and the expert for Venezuela agreed that a DCF could be reliably used, and the tribunal accepted their position.[861] Notably, in that case, the difference between the two experts was marked: the claimant's DCF value was over US $1.3 billion,[862] while Venezuela's DCF value was negative.[863]

355. Likewise, the *Crystallex* tribunal found that a forward-looking, income-based approach was appropriate to value that project even though the company did not have a proven track record of profitability and never started operating the mine. The tribunal did so because it found that Crystallex "had completed the exploration phase, the size of the deposits had been established, the value can be determined based on market prices, and the costs are well known in the industry and can be estimated with a sufficient degree of certainty."[864]

356. The *Gold Reserve* and *Crystallex* awards do not stand alone. There is a substantial body of investment treaty cases where tribunals have endorsed using a DCF as the valuation

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858 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September 2014.

859 **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016.

860 Respondent's Counter-Memorial, ¶¶ 690-695.

861 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶ 830.

862 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶ 848. Contrary to Mexico's contention, the DCF also considered resources, as evident from the tribunal's discussion in paragraphs 777 to 782 of the award. The tribunal ultimately excluded them from the damages because the resources were not stated in the NI 43-101 (¶ 778), were uneconomic to mine absent a significant increase in gold and copper prices (¶ 779), and had the "lowest level of geological confidence" (¶ 780). None of these factors are present here.

863 **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶ 833.

864 **CL-0042**, *Crystallex International Corporation v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)/11/2) Award, 4 April 2016, ¶ 880. *See also* **CL-0056**, *Gold Reserve Inc. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB(AF)09/1) Award, 22 September, ¶¶ 14, 18, 25, 28; **CL-0116**, *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case No. ARB/12/1) Award, 12 July 2019, ¶¶ 330-335.

methodology for projects without an operating track record or a history of profitability,[865] including mining properties that are not yet in production.[866]

357. Here, Compass Lexecon's DCF model is built from data and information available as of the Valuation Date, which demonstrates, on the balance of probabilities, that the Project would have produced profits from the Concessions in the face of the particular project risks, but for the breach of NAFTA. These data and information have been validated by the independent expert reports of Dr. Selby, Dr. Sheehan, Mr. Gruber, Mr. Fuller, and Dr. Heffernan. Their collective opinion is that the Don Diego Project was at the PFS stage as of 7 April 2016. The fact that this information was not assembled into a single study is immaterial. As Agrifos also confirmed, "[t]he information available for the Don Diego project in April 2016 is sufficient for a knowledge counterparty to calculate a useful DCF value and more generally conduct due diligence needed to assess the project's value."[867] Mexico and its experts are elevating form over substance. Claimant's expert evidence stands unrebutted.

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865 *See, e.g,* **CL-0037,** *Compañia de Aguas de Aconquija S.A. and Vivendi Universal S.A. v. Argentine Republic* (ICSID Case No. ARB/97/3) Award, 20 August 2007, ¶ 8.3.10 (lack of a history of profitability does not preclude the application of DCF when claimant shows that, on a balance of probabilities, the investment would have produced profits); **CL-0003**, *ADC Affiliate Limited & ADC & ADMC Management Limited v. Republic of Hungary* (ICSID Case No. ARB/03/16) Award, 2 October 2006, ¶¶ 506-507 (lack of extensive operational record is no bar to a DCF valuation based on the investor's contemporaneous business plan); **CL-0182,** *PL Holdings S.à.r.l. v. Republic of Poland* (SCC Case No. V 2014/163) Partial Award, 28 June 2017, ¶¶ 554-556 (lack of track record does not preclude valuation of a newly formed bank based on contemporaneous management projections); **CL-0157,** *CC/Devas (Mauritius) Ltd. and Others v. The Republic of India* (PCA Case No. 2013-09) Award on Quantum, 13 October 2020, ¶¶ 537-540 (lack of operational activity does not prevent DCF valuation when business has some "commodity features" akin to natural-resources commodities); **CL-0098**, *Rumeli Telekom A.S. and Telsim Mobil Telekomikasyon Hizmelteri A.S. v. Republic of Kazakhstan* (ICSID Case No ARB/05/16) Award, 29 July 2008, ¶¶ 809-814 (lack of track record does not prevent DCF valuation of both company and telecommunication license); **CL-0177**, *Mohammad Ammar Al-Bahloul v. The Republic of Tajikistan* (SCC Case No. V064/2008) Final Award, 8 June 2010, ¶ 75.

866 *See, e.g,* **CL-0116,** *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case No. ARB/12/1) Award, 12 July 2019, ¶¶ 330-335; **CL-0099,** *Rusoro Mining Ltd. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB (AF)/12/5) Award, 22 August 2016, ¶ 759; **CL-0177**, *Mohammad Ammar Al-Bahloul v. The Republic of Tajikistan* (SCC Case No. V064/2008) Final Award, 8 June 2010, ¶¶ 71, 75.

867 Agrifos ER, ¶ 14.

2. Mining Industry Standards and Guidelines Recognize That a Forward-Looking Income Valuation Is Appropriate for Pre-Production Properties Like Don Diego, and Mining Industry Practice Confirms This

358. Mexico and its experts make several logical and factual errors when incorrectly arguing that mining industry standards forbid the use of forward-looking income valuation methods such as a DCF for mineral properties like Don Diego. These errors, discussed in detail below, can be summarized in three points.

a. First, Mexico and its experts implicitly assume that public reporting standards are *mandatory* and must be met even before a valid, accurate DCF can be developed *privately* by a sophisticated party. In fact, those standards were developed to protect investors from misleading *public* disclosures. The valuation sections are set out as guidelines. As a result, many of Mexico's arguments about formal compliance with such standards remain superficial and fail to address the fundamental point that a DCF can be validly used to value this property in these circumstances, just like a hypothetical willing investor would do in the real world.

b. Second, Mexico and its experts mischaracterize the content of the mining industry standards and guidelines to which they refer, claiming, for example, that deposits must be classified as reserves or that projects must have a PFS issued before a DCF can be performed. In fact, neither is true, and there is nothing in the relevant standards that forbids the use of a DCF here. To the contrary, both CIMVAL and VALMIN recommend an income-based approach to pre-PFS Mineral Resource Properties in some cases.

c. Third, Mexico and its experts misapply mining industry standards and guidelines to the Don Diego deposit, stating that Don Diego does not meet certain standards or definitions (such as that of a Mineral Reserve) that are not claimed in this case and are irrelevant to the Deposit.

359. For all of these reasons, as shown below, Mexico and its experts fail to raise a valid reason why a DCF cannot be used to value the Don Diego resource.

a. Mexico Improperly Applies Public Reporting Standards to a Hypothetical Private Transaction

360. Mexico seeks to hold Claimant to reporting standards that are not mandatory and that were intended to govern the content of public disclosures to protect uninformed investors—not private analysis for sophisticated parties—and then improperly deduces that any alleged failure to meet those formal standards must necessarily mean that there

is not enough information to support a forward-looking income valuation. This is wrong, both as a matter of logic and industry practice, where sophisticated private investors use forward-looking income valuations all the time to ascertain a deposit's value when transacting business around it.

361. There are two sets of standards and guidelines relevant to this analysis: standards **for defining resources and reserves** and standards for **valuation** (which incorporate, and rely on, the definitional standards for resources and reserves). The prevailing standards **for defining resources and reserves** emerged in the late 1990s/early 2000s in response to scandals on stock markets related to publicly listed companies, such as Bre-X, that fraudulently overstated reserves and overvalued mineral properties. In an effort to standardize public reporting and protect uninformed investors who trade in the stock market, and who would otherwise have little ability to discern the quality of mineralization, mining industry groups led by the Canadian Institute of Mining, Metallurgy and Petroleum ("**CIM**"), the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy ("**JORC**"), and the U.S.-based Society for Mining, Metallurgy, and Exploration ("**SME**") set out virtually identical definitions that provide a uniform standard for the terms Mineral Reserves and Mineral Resources.

362. Stock exchanges and securities regulators have adopted these resource and reserve definition standards into disclosure rules that apply to publicly traded companies. National Instrument 43-101 (NI 43-101) is the rule that requires mining companies listed on Canadian stock exchanges who publicly disclose reserves and resource estimates to do so in accordance with the CIM Definition Standards, including by filing a qualifying technical report with a specified format that supports scientific or technical information relating to the disclosure.[868]

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[868] *See* **WGM-01**, National Instrument 43-101 Standards of Disclosure for Mineral Projects, 24 June 2011, Parts 4-6. The Australian Stock Exchange (ASX) rules also require conformance with JORC standards. **C-0449**, ASX Listing Rules, Chapter 5: Additional Reporting on Mining and Oil and Gas Production and Exploration Activities, 1 December 2019, Section 5.6.

363. WGM improperly attacks the NI 43-101 Technical Report in this case for its alleged failure to satisfy the CIM definition of a Mineral Resource or to meet certain formal requirements of NI 43-101, which Quadrant and Mexico then argue means that the Don Diego Project's stage is too early to reliably perform a DCF under related valuation standards (discussed further below). Putting aside the problems with the merits of WGM's criticisms, which are also addressed below, Odyssey was not even required to issue a NI 43-101-compliant technical report for its resource. Odyssey is listed in the U.S. and, under SEC regulations prevailing at the time, could not make public disclosure reports until reserves had been declared.[869] The NI 43-101 Technical Report makes clear that its purpose was not to inform the investing public at large, but rather was intended to guide the company on subsequent work to declare reserves, inform existing investors, and support efforts to raise additional debt and/or equity capital from sophisticated investors that do not require the same types of protections as shareholders on public exchanges.[870]

364. Crucially, and contrary to WGM's position, in the real-world of the mining industry, such investors performing due diligence would consider the NI 43-101 Technical Report regardless of their view of whether it formally meets each and every requirement of the CIM Definition Standards. Rather, they would evaluate it based on the standards used by the Qualified Person ("**QP**") and the QP's reputation, and would test it with their own analyses of the data. As Mr. Fuller notes, "Mexico's argument appears built on a faulty assumption: that all of the formal CIMVAL and VALMIN reporting requirements are necessary before a deposit can be considered a resource for valuation purposes."[871] Mr. Fuller points out that "[t]his view conflates a public report on economic viability with a

869 **R-0154**, SEC Industry Guide 7, § 7(a)(4)(i); Gordon WS2, ¶¶ 45-46.

870 For example, the NI 43-101 Technical Report states: "The report provides a framework for the status of the DD West Phosphorite Deposit for Oceanica's management, provides guidance for future project tasks in order to develop a NI 43-101 style document stating the proven and probable mineable reserves, and may be used to introduce or update private investors to the Don Diego Phosphorite Project (Project)." **C-0084**, NI 43-101 Technical Report, p. 16.

871 Lomond & Hill ER2, ¶ 6.1. Mr. Fuller notes that "[t]his is clear from Mexico's statement that if a document 'is not in compliance with regulatory disclosure requirements,' it 'consequently cannot be used for a financial analysis.'" (Lomond & Hill ER2, ¶ 6.1 (citing Respondent's Counter-Memorial, ¶ 657, quoting WGM ER, ¶ 40.).)

company's internal processes and assessment," adding that "[w]hether or not the Technical Report or business planning documents meet the public reporting rules highlighted by WGM is a separate and unrelated issue."[872] In Mr. Fuller's wide industry experience, "the idea that such an assessment would only be based on public reports is highly impractical and, frankly, nonsensical."[873]

365. Agrifos confirms that public reporting standards "are of course relevant to maintain analytical and reporting consistency and integrity for mineral resource projects, particularly for publicly listed companies where investors may not have the same level of sophistication or experience as private investors," but that "[i]n assessing actual potential transactions, however, knowledgeable counterparties typically are not very concerned about the formalities of such standards."[874] "More important are the reputation and experience of the parties involved and whether or not there is consistency and depth across the available information and analysis."[875]

366. Mr. Fuller concurs with this assessment, observing that "[i]n reality, any sophisticated investor or would-be acquirer would request, examine, and independently analyse the underlying data collected by the Project . . . as part of a due diligence exercise and draw its own conclusions about the Project's value and prospects. Indeed, any sophisticated investor or would-be acquirer would likely perform this exercise even in the case of an operational mine with very advanced technical and economic assessments presented by the seller."[876]

367. In fact, WGM's *own sources* confirm this understanding of how the mining industry operates. Relying on a statement by the Australian Securities and Investments Commission ("**ASIC**"),[877] WGM claims that companies may not use scoping studies "as a

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872 Lomond & Hill ER2, ¶¶ 6.2, 6.4.

873 Lomond & Hill ER2, ¶ 6.4.

874 Agrifos ER, ¶ 12 fn. 1. *See also* Selby ER2, ¶ 93.

875 Agrifos ER, ¶ 12 fn. 1.

876 Lomond & Hill ER2, ¶¶ 6.16-6.17.

877 **WGM-13**, Australian Securities and Investments Commission, Mining and Resources – Forward-looking Statements, October 2016.

basis for a financial analysis,"[878] when in reality, the opposite is true. ASIC clarifies: "entities develop or engage others to develop scoping studies (or studies of a more preliminary nature) for internal management purposes and, in particular, to help inform a decision on whether to commit the entity to the next stage of exploration or development" and goes on to state that "[t]hese preliminary studies sometimes contain forward-looking statements such as production targets, forecast financial information and income-based valuations. This is common and acceptable practice."[879]

368. Mexico compounds these errors when discussing the requirements for standards for **valuation**. For similar reasons of standardization and enhancing public confidence, the abovementioned mining industry groups have also developed valuation standards and guidelines, the oldest and best known of which are CIMVAL (Canada) and VALMIN (Australia). Unlike the definition standards for reserves and resources, the CIMVAL valuation standards and guidelines are not incorporated into Canadian or securities or exchange regulations such as NI 43-101.

369. It is important to note that CIMVAL and VALMIN contain both standards (which are mandatory) and guidelines (which are recommended, but not mandatory). The parts that discuss valuation methods, including which are appropriate for different types of mineral properties, are guidelines, not standards. Again, while performing a DCF for the Don Diego Project is absolutely appropriate under a correct reading of these guidelines, as discussed in detail below, one should recognize that Mexico and its experts treat CIMVAL and VALMIN with a doctrinaire rigidity that is not applied in practice, especially in the context of how a valuation would be done in this case by the hypothetical arm's-length sophisticated investor.

370. As Agrifos notes, "[r]eal world counterparties in phosphate and other mineral projects, including Agrifos itself, use DCF analyses regardless of CIMVAL or VALMIN guidelines."[880]

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878 WGM ER, ¶ 40.

879 **WGM-13**, Australian Securities and Investments Commission, Mining and Resources – Forward-looking Statements, October 2016, p.12. *See also* Lomond & Hill ER2, ¶ 6.3.

880 Agrifos ER, ¶ 48.

Mr. Fuller also observes that "[i]n a case such as Odyssey's Don Diego Project, a company would use a DCF model based on the NI 43-101 Technical Report and associated business planning [redacted] to decide whether to proceed with the next phase of a project."[881] Indeed, as Mr. Fuller notes, the DCF is "the de facto standard valuation tool in the mining sector,"[882] and that even for early-phase projects, "[t]he approach outlined by Quadrant . . . is simply not how resource companies operate in the real world."[883]

371. This real-world practice has been recognized by economists: "Projects in the extractive and renewable sectors, even pre-production projects, often exhibit characteristics that facilitate the development of reliable cash flow forecasts and risk adjustments. These characteristics explain the routine use of the DCF method by developers for valuing such projects."[884] As Compass observes, "[p]hosphate is a commodity (unlike untested products) which means that there will be a demand for the Project's product at prevailing phosphate rock prices. Therefore, this allows for a more accurate estimate of future cash flows."[885]

b. Mexico Mischaracterizes or Avoids Mining Industry Standards and Guidelines

372. Beyond Mexico's improper use of public reporting standards to criticize the private industry work that was done to bring the Don Diego Project to PFS level, Mexico and its experts also mischaracterize the content of those valuation standards and guidelines in an attempt to create the impression that they would not permit an income-based valuation for the Project. In reality, an income-based valuation for Don Diego falls comfortably within the methods contemplated in the CIMVAL and VALMIN standards for valuing such projects.

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881 Lomond & Hill ER2, ¶ 6.4.

882 Lomond & Hill ER2, ¶ 6.5.

883 Lomond & Hill ER2, ¶ 6.7.

884 **C-0466**, R. Caldwell, et al., "Chapter 11: Valuing Natural Resource Investments," in: *Contemporary and Emerging Issues on the Law of Damages and Valuation in International Investment Arbitration* (2018), p. 302 (cited in Compass Lexecon ER2, ¶ 18).

885 Compass Lexecon ER2, ¶ 42.

373. Quadrant, for example, argues that a DCF is not appropriate to value the Don Diego Project because it did not have Mineral Reserves.[886] This is fundamentally at odds with the CIMVAL and VALMIN guidelines, which also permit income-based valuations for Mineral Resources, even when Mineral Reserves have not yet been declared. Indeed, CIMVAL even advises on how this should be done:[887]

> **G4.5** It is generally acceptable to use Measured and Indicated Mineral Resources in the Income Approach if Mineral Reserves are not present provided that in the opinion of a Qualified Person the Mineral Resources as depicted in the Income Approach model are likely to be economically viable.
>
> **G4.6** Where Measured and Indicated Mineral Resources are used in the Income Approach, the technical and related parameters used must be estimated or confirmed by one or more Qualified Persons and a qualifying statement must be included in the Valuation Report about the confidence level of the technical and related parameters relative to Feasibility Study or Prefeasibility Study confidence level. Technical and related parameters must be Current with respect to the Valuation Date.

374. As Compass notes, "[t]his is precisely the type of exercise we have performed in our due diligence analysis: we took the geological and technical work performed on the Project until the Date of Valuation, validated the assumptions with the opinion of knowledgeable independent experts and applied market expectations as of the Date of Valuation. We furthermore recognized the incremental uncertainty in the estimates through a higher discount rate and specific resource conversion factors."[888]

375. Mexico and its experts also misstate the guidelines where they claim that "[t]he absence of a PFS . . . would preclude the use of a DCF approach under recognized mining guidelines and practices."[889] On the contrary, none of the valuation guidelines precludes using a forward-looking income approach where a formal pre-feasibility study has not yet been

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886 *See* Quadrant ER, ¶ 175 ("[A]s explained above, the DCF is not appropriate to value Phase I, and even less so to value Phase II . . . as Phase I, Phase II does not have any proven or probable reserves.").

887 **C-0196**, CIMVAL Standards 2003, G4.5-4.6.

888 Compass Lexecon ER2, ¶ 49.

889 Respondent's Counter-Memorial, ¶ 676. *See also* Quadrant ER, ¶ Section III; WGM ER, ¶ 12.

assembled. A consolidated PFS study is simply not required for the valid use of a DCF under the CIMVAL or VALMIN guidelines. This is clear from the text quoted from the CIMVAL Standards 2003 above, which states that when using an income approach to value Mineral Resources, a qualifying statement should be included regarding the "technical and related parameters relative to Feasibility Study or Prefeasibility Study confidence level."[890] The key concept is the "confidence level" of the preparatory work, not whether it has been collated or bound into a single report.

376. Indeed, the CIM industrial minerals best practices document goes even further, endorsing the possibility of mineral properties *going into production* without a formal PFS or FS. CIM expressly contemplates scenarios wherein the operator determines that "a formal prefeasibility or feasibility study in conformance with NI 43-101 and 43-101 CP is not required for a production decision."[891] Rather than prohibiting such a decision, CIM advises that this simply be treated as a risk factor, stating that "where production has not yet commenced, . . . the lack of a formal pre-feasibility or feasibility study with respect to a venture should be clearly communicated to current and potential stakeholders as this may be considered a risk factor."[892]

377. For these reasons, Mexico's argument that the development stage of the Don Diego Project cannot be addressed by "*ex-post facto* expert reports prepared for the purposes of this litigation that, in any event, would not have been available to the hypothetical willing buyer and seller on 7 April 2016" is wrong.[893] Logically, Mexico's argument cannot be correct, because it would prevent tribunals from ever hearing independent expert

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890 **C-0196**, CIMVAL Standards 2003, G4.6.

891 **WGM-002**, CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines for Industrial Minerals, 23 November 2003, p. 6. An example of Mexico's and WGM's bad-faith approach to this issue can be seen at Respondent's Counter-Memorial, ¶ 659, where they state: ["scoping study must not be used as the basis for estimation of Mineral Reserves" argument]. This is not what Odyssey is doing—to the contrary, the contemporaneous evidence establishes that there is a robust, large resource.

892 **WGM-002**, CIM Estimation of Mineral Resources and Mineral Resolves Best Practice Guidelines for Industrial Minerals, 23 November 2003, p. 6. For this reason, as well, Respondent's argument that [redacted] is not a PFS is beside the point. (Respondent's Counter-Memorial, ¶ 655.) No one is claiming that [redacted] itself is a PFS. [redacted] that was most developed at the time of expropriation, and as such forms the point of departure for the hypothetical buyer's due diligence inquiry.

893 Respondent's Counter Memorial, ¶ 677.

testimony about a project's development stage (or anything else for that matter), even where, as here, that testimony is based solely on contemporaneous evidence.

378. Courts have recognized and endorsed this obvious, necessary principle. A United States federal court expressed it succinctly when rejecting a party's objection to the use of an expert valuation that employed a discounted cash flow valuation based on *ex post facto* analysis of pre-valuation date data: "There is a difference in using post-valuation-date data and using post-valuation-date analysis of data in existence at the valuation date. The former is using the future to make past predictions of it more accurate, as if the weather forecast from yesterday were modified to take into account the actual results. This would be inappropriate. However, the [Expert] Report relies on analyses of data from the 1963-1993 period, which lies entirely before the March 15, 1994 valuation date. This is entirely appropriate."[894]

379. Mexico's would-be rule would also artificially require the hypothetical buyer to simply accept, at face value, whatever information the seller had available in whatever form it was available at the moment of an abrupt and involuntary project termination. This position essentially precludes the hypothetical buyer from performing its own analysis of the then-existing project information and data, which defies reason and contradicts the clear mining industry practice of conducting exactly such due diligence for valuation as discussed above.[895] In this vein, courts frequently remind litigants of the essential principle that "valuation analyses should be performed taking into account" not only

894 **CL-0217**, *Thomas Horn, et al., v. Robert McQueen, et al.,* 353 F.Supp.2d 785 (W.D. Ky. 2004), p. 29.

895 See, for example, Mr. Fuller's observation that: "In reality, any sophisticated investor or would-be acquirer would request, examine, and independently analyse the underlying data collected by the Project . . .as part of a due diligence exercise . . . and draw its own conclusions about the Project's value and prospects. Indeed, any sophisticated investor or would-be acquirer would likely perform this exercise even in the case of an operational mine with very advanced technical and economic assessments presented by the seller. This is essentially the exercise Compass Lexecon has performed in its reliance on independent expert analysis of Project data that was available at the valuation date and its use of a DCF model to estimate the Project's value. In the author's opinion and experience, this process would be the mechanism by which an investor in the real world would determine the price he or she would be willing to pay to invest in or acquire the Project at a given point in time." Lomond & Hill ER2, ¶¶ 6.16-6.17.

information "that was *known*" but also information that was "*knowable* as of the valuation date."[896]

380. For this reason, Claimant's use of industry experts to advise the hypothetical willing buyer on the Project's development stage and feasibility is not only appropriate, but necessary. Mexico's failure to engage with Claimant's quantum evidence demonstrating the Project was at a PFS confidence level, discussed in detail below, is fatal to their efforts to resist an income-based valuation method here.

381. Finally, even if, for the sake of argument, the Don Diego Project were not at a PFS level of development at the date of valuation (in spite of the overwhelming and unrebutted evidence, as detailed below, demonstrating that it was), "it would have to be characterized as in the pre-development stage (equivalent to 'Mineral Resource Property' as per CIMVAL definitions) and not as an exploration one (as wrongly claimed by Dr. Flores)[897] according to VALMIN and CIMVAL definitions."

382. Mexico and its experts entirely avoid discussing this alternative scenario, preferring instead to struggle against all evidence to try to portray the Don Diego Project as at an exploration stage on the date of valuation. The motivation for this strategy is obvious, because, as Compass Lexecon demonstrates, even "if we were to accept that Phase I can at most be defined as a Mineral Resource Property, the income approach could still be an appropriate valuation methodology."[898] This is because CIMVAL explicitly provides that, in certain circumstances, "Mineral Resource Properties can be analyzed through the

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896 **CL-0212**, *Official Committee Of Unsecured Creditors v. Calpers Corporate Partners, LLC, et al.,* Docket No. 1:18-cv-68-NT, 2020 WL 4041483, p. 12 (D. Me., 17 July 2020) (emphasis added). *See also* **CL-0219**, *Walter Gross, et al., v. Commissioner of Internal Revenue*, 272 F.3d 333 (6th Cir. 2001) (noting that even events post-dating the valuation date may be considered in valuations provided "they were reasonably known on the date of valuation.").

897 Compass Lexecon ER2, ¶ 44. As Compass Lexecon correctly notes, "CIMVAL defines a Mineral Resource Property as '*a Mineral Property which contains a Mineral Resource that has not been demonstrated to be economically viable by a Feasibility Study or Prefeasibility Study . . .*' Given that the Don Diego Project had mineral resources, as established in the NI 43-101 and supported by Dr. Selby, Phase I would at least be categorized as a Mineral Resource Property (pre-development project). Therefore, Dr. Flores's conclusion that the Project was at the exploration stage is not only inconsistent with the findings of the Technical Experts, but also with CIMVAL and VALMIN valuation guidelines." Compass Lexecon ER2, ¶ 45 (citing **CLEX-28**, The VALMIN Code, 2015 Edition, Effective January 30, 2016, p. 38).

898 Compass Lexecon ER2, ¶ 46.

income approach."[899] In order to do so, both VALMIN and CIMVAL simply recommend "that risks and uncertainties be recognized through adjustments in the DCF valuation," which Compass has done by "rel[ying] on the critical judgement of the Technical Experts and best practices in accordance with VALMIN and CIMVAL."[900]

c. Mexico Misapplies Mining Industry Standards and Guidelines

383. Before moving on to discuss the volumes of unrebutted evidence demonstrating that the Don Diego Project was at a PFS stage of development as of the Valuation Date, it must be noted that Mexico and its experts attempt a sleight of hand by misapplying mining industry standards and guidelines to the Don Diego deposit. In essence, their claim is that certain preparatory work performed by Odyssey and ExO prior to Mexico's wrongful denial of the MIA does not meet certain standards or definitions that are not claimed in this case and are irrelevant to the deposit. For example, Mexico describes Odyssey's [redacted] as "at best, an internal scoping study,"[901] and then goes on to quote CRIRSCO, a template for international mineral reporting, as providing that "[a] Scoping Study must not be used as the basis for estimation of Mineral Reserves."[902] But, as should be clear by now, this point is irrelevant—Odyssey is not claiming that its work was used to estimate Mineral Reserves. What is at issue instead is a valid and confirmed Mineral Resource estimate that has been shown to be economically viable, and that can easily support the use of income valuation methods under prevailing national guidelines.

384. In its Counter-Memorial, Mexico cites the *Bear Creek* award when setting forth the standard for use of a DCF in this case as "whether, having regard to the factual circumstances of this case, a willing buyer might have been found who would have paid a price calculated by the DCF method, as Claimant alleges."[903] As is clear from industry guidelines and compelling examples of industry practice illustrated in the foregoing section, the answer to that question is yes.

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899 Compass Lexecon ER2, ¶¶ 46-47.
900 Compass Lexecon ER2, ¶¶ 46-47.
901 Respondent's Counter-Memorial, ¶ 657.
902 Respondent's Counter-Memorial, ¶ 659.
903 Respondent's Counter-Memorial, ¶ 682.

3. Respondent Has No Answer to Claimant's Factual Evidence and Evidence from Leading Field Experts Demonstrating That the Project Was at the Pre-Feasibility Stage when SEMARNAT Denied the MIA

385. Mexico and Quadrant implausibly assert that the Don Diego Project was only at the exploration phase of development based on a contrived analysis from WGM, which not only invents non-existent standards for resource estimation (that even WGM itself does not use in practice), but then poses generic and tentative risk-spotting questions that were already definitively answered by the volumes of technical evidence accompanying Claimant's Memorial. Insofar as Mexico proceeds as if virtually all of Claimant's quantum case did not exist, it is worth recalling briefly several key aspects of Claimant's quantum evidence:

a. Resource:

i. nder the supervision of the Project QP, **Henry Lamb**, a world-renowned phosphate geologist who industry experts say is "widely considered one of the most knowledgeable, experienced and reliable in the field,"[904] Claimant conducted extensive exploration work that involved taking [redacted] geolocated core samples from the ocean floor on numerous research voyages while also constructing a detailed three-dimensional sonar map of the ocean floor terrain (known as "bathymetry").

ii. The Florida Industrial and Phosphate Research Institute ("FIPR"), an independent, internationally-recognized phosphate laboratory and research center, performed chemical tests (or "assays") on over [redacted] individual core samples from across the deposit. The assays confirmed Mr. Lamb's geological assessment that the deposit was a flat, homogenous, single layer of phosphorite-rich sand sitting exposed or nearly exposed at the surface of the seabed, [redacted].

iii. Additional testing by FIPR and other independent scientists showed that the Don Diego phosphate sand could be refined into commercial-grade phosphate rock using elementary, off-the-shelf techniques that have been proven in the phosphate industry for over 100 years. These same conclusions were generated by tests run independently by commercial

[904] Agrifos ER, ¶ 23. Agrifos further notes that Mr. Lamb has a reputation "for realistic – even conservative – resource estimations." (Agrifos ER, ¶ 23.) *See also* Gruber ER2, p. 7 ("I would also add that Mr. Lamb is a well-known professional geologist with over 40 years of experience with sedimentary phosphate deposits and the fertilizer industry in many different locations around the world."); *see also* **C-0459**, Henry James Lamb CV, 21 June 2021.

parties that invested in the Project, including the marine contractor Boskalis and the Mexican mining conglomerate AHMSA/MINOSA.

iv. Further testing by global mining engineering firms, including Jacobs Engineering, demonstrated that this commercial-grade phosphate rock performed exceptionally well when "acidulated" into phosphoric acid, making it commercially attractive as a feedstock for fertilizer.

v. Based on this compelling evidence, Mr. Lamb issued a NI 43-101 Technical Report that declared 494 million tonnes (mt) of Measured, Indicated, and Inferred Mineral Resource. Further testing of core samples to the north of this area led Mr. Lamb to increase the Mineral Resource volume to 588 mt.

vi. Independent analysis by **Dr. Ian Selby**, a QP and one of the world's leading marine geologists of the continental shelf and slope, who has directed or overseen the extraction of hundreds of millions of tonnes of marine minerals with dredging programs around the world, including for the UK Government, the Hong Kong Government, and the world's largest marine aggregate dredging company,[905] of this same geological data and evidence found Mr. Lamb's work to be, if anything, extremely conservative.[906] With support from independent international mining consultancy **Mining Plus**,[907] which performed a geostatistical analysis on the same data Mr. Lamb had used, Dr. Selby validated Mr. Lamb's Mineral Resource volume estimations and concluded [redacted]

b. Feasibility of Dredging and Production Forecasts:

i. Odyssey brought on board as the engineering Project Manager one of the world's foremost marine mining engineers, **Mr. Craig Bryson**, who has over 20 years of experience designing, implementing, and managing both terrestrial and marine mining projects worldwide, including ocean floor diamond dredging and continental shelf marine aggregate dredging.[908]

ii. Odyssey also engaged as its contractor **Boskalis**, which Dr. Selby explains is "one of the largest marine contractors" and among the "notable world-leading dredging and offshore contractors that operate on a global basis," stressing that they have "a strong reputation for delivery of dredging and

905 Selby ER1, ¶¶ 6-9, and Appendix 1, Curriculum Vitae.
906 Selby ER1, ¶¶ 80-83
907 MP Geostatistics ER, pp. 4-11; MP HGR ER, pp. 4-9.
908 Bryson WS1, ¶¶ 2-11.

infrastructure projects in a wide range of marine environments around the world."[909]

iii. Over the course of nearly three years, Boskalis and Mr. Bryson worked to refine the engineering and technical configuration for the Project to PFS level with an approach that reduced operating and capital cost estimates and enhanced environmental stewardship to an unprecedented level, while keeping production rates at business plan targets.

iv. **Dr. Colm Sheehan**, a highly-respected chartered structural engineer with a PhD in dredged material management and extensive experience in project management and feasibility studies for dredging projects around the globe,[910] scrutinized Boskalis' estimated cost and production figures. He concluded that they not only met the standard of a PFS-level of confidence, but they were actually conservative: "We generally consider that the proposed vessel may be able to achieve more favourable daily production than considered for this estimate," which "would result in reduced operating costs."[911]

v. Dr. Selby agreed, and emphasized that dredging project risks were very low because "mineral sand production by the [dredger] at the volumes proposed in the Don Diego Project is absolutely routine and has been practiced in environments directly comparable to that of the Don Diego Concession for many decades."[912]

c. <u>Feasibility of Separation, Processing, and Production Forecasts</u>:

i. During their years of work on this Project refining the engineering and technical configuration to PFS level, Boskalis and Mr. Bryson also developed the environmentally-clean, no-chemicals-used materials processing circuit to separate the dredged sediment into phosphate rock on board the processing vessel, while replacing unused sand directly on the seabed using a downpipe.

ii. They drew upon their combined decades of experience with particle sizing technology: Mr. Bryson, from using the same technology offshore to separate sediment dredged by Atlantic Ocean floor diamond dredgers, and to separate marine aggregate dredged in the North Sea; and Boskalis,

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909 Selby ER1, ¶ 91. *See also* ADBP ER, Section 3.3, p. 3 (describing Boskalis as "among the world's largest and most experienced dredging contractors"). As Mr. Bryson adds, "Boskalis was (and is) a company with enormous resources," noting that it "owned and operated over 1,100 vessels around the world, with over 15,600 employees." (Bryson WS1, ¶ 39.)

910 ADBP ER, Section 1.3, p. 1 and Appendix A, Curriculum Vitae.

911 ADBP ER, Section 3.3, p. 4. *See also* Section 4, p. 6.

912 Selby ER1, ¶ 132.

benefiting from both its "extensive experience since the 1980s with mechanical separation processes involving vibrating and static screening, hydrocycloning and hydrosizing of all kinds of dredged sediment," and also the deep experience of its longtime equipment suppliers and partners, Weir Minerals, B&D Process Equipment, DRA Global, SGS Bateman, and Metso.[913]

iii. Phosphate industry mainstay **Mr. Glenn Gruber**, a QP with over 40 years of experience in phosphate metallurgy and beneficiation plant design who has consulted on some of the world's most well-known phosphate projects,[914] conducted a detailed process study and simulation using the resource chemical composition and particle size distribution in order to test the feasibility of Boskalis' proposed production rates, volumes, and product quality, as well as to determine the precise models and capacities of processing circuit equipment that would be required for this flowsheet. Mr. Gruber used the same data underlying the NI 43-101 Technical Report and Boskalis' inputs. He validated all of Boskalis' figures as reasonable and added that the engineering work's level of confidence was PFS level.

iv. Mr. Gruber also observed that "[t]he Don Diego production concept mimics technology that was proven over 100 years ago"[915] and that the ranges of performance are well-known and predictable for this technology with the type of material found in the Don Diego resource.[916]

d. Cost Forecasts:

i. As noted above, Drs. Selby and Sheehan validated Boskalis' estimated dredging costs as conservative and as de-risked to at least a PFS level, with Dr. Sheehan underscoring that, as one of "the world's largest and most experienced dredging contractors," Boskalis "would have a detailed understanding of the costs of operating their own vessels and the inherent dredging and project cost and production parameters for large-scale and long-term dredging projects, such as that involved with the proposed Don Diego Phosphate Mining Project."[917]

ii. **Mr. David Fuller**, a Chartered Engineer in Australia and the UK who specializes in structural engineering in mining, industrial, heavy infrastructure, and defense projects, including design, construction, and assessment of all manner of minerals processing plants and authoring of

913 Bryson WS1, ¶ 99.
914 Gruber ER2, p. 1; **GG-0002**, Glenn Gruber CV.
915 Gruber ER2, pp. 10, 11.
916 Gruber ER2, p. 13.
917 ADBP ER, Section 3.3, p. 3.

feasibility studies,[918] studied Boskalis' CAPEX and OPEX estimates for the processing vessel. Mr. Fuller independently validated them as reasonable, noting they were at PFS level, which in his view was "consistent . . . with a contractor expert in such projects and drawing on an extensive internal database of costs and past projects."[919]

e. Marketing Feasibility and Price Forecasting:

i. Throughout the development of the Project, Odyssey's Research and Scientific Services ("**RSS**") department conducted research on market opportunities and prevailing phosphate market prices and price forecasts using contemporaneous data sourced from the world's leading phosphate market experts, CRU. [redacted][921] [redacted][922]

ii. **CRU,** the world's leading consultancy in fertilizer and phosphate pricing,[923] appearing as an independent expert in this arbitration, validates the market opportunities that Odyssey had identified as reasonable, and affirms that Odyssey's planned quantities of phosphate rock production could reasonably be placed in the global phosphate market at profitable prices.[924]

386. By contrast, Mexico asks WGM—a single expert—to weigh in on all of these points, despite their uneven (or non-existent) experience across these categories. Indeed, WGM

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918 Lomond & Hill ER1, Appendix B, Qualifications and Technical Expertise.

919 Lomond & Hill ER1, ¶ 5.1.3.

920 Gordon, WS2, ¶ 19; [redacted] p. 14.

921 Gruber ER2, p. 8; Gordon, WS2, ¶ 19.

922 Gordon WS1, ¶¶ 60, 64; Gordon WS2, ¶¶ 5-14, 18, 22-24, 27-37, 39.

923 CRU's designated expert in these proceedings is Dr. Peter Heffernan. Dr. Heffernan is the former Managing Consultant of CRU's fertilizer consulting practice and has more than 30 years of industry experience. (*See* Heffernan ER1, p. 1; Heffernan ER2, pp. 1-2.)

924 Heffernan ER1, pp.77-85; Heffernan ER2, pp. 19-22.

"is a firm with little to no recognition in the phosphate industry"[925] and has no dredging experience, no offshore or marine resource analysis or development work, and no expertise as market analysts.[926]

387. WGM exceeds the boundaries of the fields in which they fairly can be considered experts. What is more, the WGM Report adopts a partisan approach that does not objectively address the record evidence. WGM barely mentions, let alone addresses, the evidence submitted with Claimant's Memorial. Despite having listed Claimant's witness statements, expert reports, and relevant supporting exhibits as materials made available to it, WGM mentions key Claimant's witnesses' and experts' evidence either rarely in passing (*e.g.*, Dr. Selby, three times;[927] Mr. Fuller, in one paragraph[928]) or never (*e.g.*, Mr. Gruber, Mr. Bryson, and Dr. Sheehan). The contractor, Boskalis, is mentioned only once.

388. The vast majority of Claimant's quantum case and analysis is not even acknowledged.

389. Instead, WGM focuses almost entirely on the NI 43-101 Technical Report, attacking based on, among other things, "industry standards" that do not exist and that WGM does not apply in practice when issuing its own NI-43-101 resource classifications. Otherwise, WGM makes sweeping, vague, and unsubstantiated comments that are demonstrably false and answered in the record, such as its unsupported assertion that the Don Diego Project is based on "novel production concepts and unproven technology."[929]

390. Moreover, on the few occasions where it does acknowledge Claimant's quantum evidence, WGM misrepresents it. To take but one of many examples, when listing what it claims are potential technical feasibility issues, WGM asserts that they were "identified by the Jan De Nul review of the project," citing the unsuccessful tendering bid document

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925 Agrifos ER, ¶ 24. Agrifos, CRU, and Messrs. Gruber and Fuller have all noted errors in WGM's Expert Report that suggest a lack of experience. *See, e.g.,* Agrifos ER, ¶ 24; Gruber ER2, pp. 1-2, 4-7, 10-12 (pointing to basic WGM errors as regards the phosphate industry); Lomond & Hill ER2, ¶ 3.6 (citing additional WGM errors).

926 As a matter of fact, throughout its report, WGM primarily relies on data from Claimant's expert, CRU, whenever they engage in any phosphate market discussion. *See*, for example, WGM ER, ¶¶ 32, 82, 91.

927 WGM ER, ¶¶ 61, 67, 108.

928 WGM ER, ¶ 40.

929 WGM ER, ¶ 102.

by the dredging contractor Jan De Nul.[930] However, a careful review of that document reveals that none of the issues WGM lists are mentioned there, and WGM provides no quotations or page numbers to assist. As discussed below, these issues pervade WGM's report and are serious enough to raise questions about the rigor of their analysis, if not their overall independence.

a. Claimant's Unrebutted Evidence Demonstrates That Don Diego Would Have Been a Vast, Robust, and World-Class Source of Phosphate

391. In its report, WGM opines on the volume, continuity, and classification of the Don Diego resources *without conducting an independent analysis of the actual data underlying the NI 43-101 Report*. This data comes from [redacted] core samples that were collected by Odyssey over a series of cruises and tested by independent laboratories under the QP's supervision. WGM's comment that "[f]urther analysis by WGM is outside WGM's current scope of work"[931] suggests that its instructions did not permit this work to be done. In addition, WGM also largely ignores the extensive validation work and geological continuity analysis performed by Dr. Selby using contemporaneous Project information and data.[932] Indeed, WGM fleetingly references Dr. Selby a total of three times in its report.[933]

392. Whether by design or due to its remit, WGM instead adopts a formalistic approach and devotes much of its report to a critique over whether the mode for presenting the extensive data underlying the NI 43-101 Technical Report meets certain CIM standards for public reporting. The result is an abstract, artificial review that is not only divorced from industry practice for estimating resources, but also fails to engage with critical marine geological information about the formation of the Don Diego deposit, its

930 WGM ER, ¶ 104 (citing **C-0214**, Jan De Nul Tender Proposal, 25 May 2013).
931 WGM ER, ¶ 59.
932 Selby ER1, ¶ 67-85.
933 WGM ER, ¶¶ 61, 67, 108.

depositional environment,[934] and the compelling data supporting the existence of a world-class resource.

(i) Geological Evidence of Continuity and Drill Hole Spacing

393. First, WGM wholly fails to grapple with the strong evidence establishing a "presumption of continuity" flowing from the geological formation of the deposit.[935] As Dr. Selby observed in his first report, the evidence indicates that the phosphorite bed at Don Diego:

[936]

394. The consequence of this is that the Don Diego deposit [937] Mr. Lamb makes similar geological observations in the NI 43-101 Technical Report.[938]

395. WGM, however, simply dismisses this geological evidence in one sentence as "very general statements not suitable for the estimation of mineral resources."[939] This is a baseless assertion. The CIM Mineral Resource Estimation Guidelines counsel the opposite and explain that "[u]nderstanding the relationship between the mineralization and the

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934 Depositional environment refers to the geographical location and physical characteristics that led to the formation of a sedimentary deposit. *See, generally*, Selby ER1, ¶¶ 22-23.

935 Selby ER1, ¶ 74.

936 Selby ER1, ¶¶ 65-67.

937 Selby ER1, ¶ 68.

938 **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, pp. 28

939 WGM ER, ¶ 67.

geological processes that resulted in its spatial distribution, geometry and paragenetic history is a *key concept* in the preparation of a Mineral Resource estimate."[940] In his Second Expert Report, Dr. Selby points to numerous examples of best practice, training advice, and development experience across the mineral sector reaffirming this basic, uncontroversial principle,[941] which WGM must be aware of but elects to ignore. As Dr. Selby aptly observes, "the WGM Report presents no evidence of resource discontinuity to challenge [Dr. Selby's] interpretation of resource continuity and the integrity of the Don Diego Phosphorite deposit," while it also "does not provide a view or an analysis of the phosphorite mineralisation at Don Diego, or provide any credible alternative to [Dr. Selby's] interpretation."[942]

396. This fundamental error undermines large swathes of WGM's analysis, including, for example, where it purports to describe an industry-standard benchmark for the spacing of drill hole samples for use in determining continuity and defining and classifying all phosphate resources, and then proceeds to summarily disqualify Don Diego as a resource for its failure to meet this supposed benchmark.[943] WGM's so-called "typical maximum spacing" between drill holes—for which WGM cites no authoritative sources or industry standards in support—appears derived from the drill hole spacing used in deposits such as the Hinda deposit in Congo.[944]

397. The Hinda deposit, as Dr. Selby explains, represents the opposite end of the spectrum from Don Diego in terms of complexity and heterogeneity.[945] The Hinda deposit is highly complex due to the substantial geological forces that have acted upon it over time, splitting, folding, and dividing it over millions of years into "a complex interbedded, weathered and faulted sequence of phosphate resources" with "a high level of grade

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940 **C-0420**, CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, 29 November 2019, p. 12 (emphasis added); *see also* Selby ER2, ¶ 37.

941 Selby ER2, ¶ 37.

942 Selby ER2, ¶ 38.

943 WGM ER, ¶ 70.

944 WGM ER, ¶ 70.

945 Selby ER2, ¶ 53.

variability."[946] With this complexity comes a lower level of probability that neighboring or nearby drill hole samples will be similar in composition, [redacted]. For this reason, the fact that the geologists at Hinda chose to use comparatively close drill hole spacing to declare resources does not establish a uniform industry rule across all phosphate deposits, and has no bearing on the question of what drill hole spacing is appropriate to declare resources in the far more homogenous Don Diego deposit.[947]

398. Phosphate QP Glenn Gruber confirms this common-sense understanding that in the phosphate industry, different sample spacing is appropriate for different deposits depending on their geological complexity.[948] He also notes that in practice, the drill hole spacing for phosphate companies establishing *Mineral Reserves* is larger than the supposed "typical" spacing WGM claims is used for Mineral Resources. As Mr. Gruber states:[949]

> An illustration of this principle can be seen when comparing WGM's supposed drill hole spacing requirements for *resource* definition with major phosphate industry companies' drill hole spacing requirements for *reserve* definition. Recall that under classification definitions such as the CIM definitions, Mineral Reserves rank higher than Mineral Resources in confidence level and project development: Proven Reserves rank higher than Measured Resources, and Probable Reserves rank higher than Indicated Resources. Mosaic, the United States-headquartered multinational that is the second largest producer of phosphate rock in the Western world, uses drill hole spacing requirements for Mineral Reserve definition that would not even meet WGM's drill hole spacing requirements for Mineral Resource definition. Mosaic states that their Proven Reserves are determined using a minimum drill hole spacing of two drill holes per 40 acre block and Probable

946 Selby ER2, ¶ 53.

947 Selby ER2, ¶ 55 ("I am unconvinced that there is a rational basis for WGM's direct comparison of sample density between the Don Diego deposit with the Hinda deposit. I consider that the Hinda deposit does not provide a valid sample density benchmark on which to judge the representativity of the Don Diego vibracore sample density or the validity and confidence of the Don Diego mineral estimation and classification.").

948 Gruber ER2, p. 7.

949 Gruber ER2, p. 7, citing **GG-0005**, The Mosaic Company, Form 10-K for the year ended December 31, 2018, p. 8.

> Reserves have less than two holes per 40 acre block. This is equivalent to a hole spacing of 284 m x 284 m.

399. Moreover, not only do the drill hole spacing metrics WGM tries to impose here fail to reflect uniform industry practice, they fail even to reflect *WGM's own* practice when performing phosphate resource estimations.

a. For example, as an expert witness here, WGM claims that the typical maximum drill hole sample spacing for Measured Resources is 100 meters x 100 meters (or 50 meters x 100 meters, in the case of the Hinda deposit). This amounts to an area of influence around each drill hole of one hectare (0.01 km^2) (or 0.5 hectares (0.005 km^2) if using the Hinda drill hole spacing). However, as geological consultants on a pair of prospective Chinese phosphate mines in Sichuan Province, WGM declared Measured Resources using far more generous areas of influence that ranged up to 100 times larger, employing circular areas with radii of 200-400 meters (diameters of up to 800 meters), amounting to "a maximum area around each sample point of 50.92 hectares."[950]

b. Notably, WGM applied these standards to phosphate deposits located in an area that "has been in the process of deformation for at least the last 600 million years,"[951] with significant folding and faulting and frequent earthquakes "with some in the strong to severe categories,"[952] and steep dips of up to 58°, including a deposit WGM described as only "partially explored/defined" and "geologically complex."[953]

c. By contrast, the NI 43-101 Technical Report for Don Diego uses [redacted] around drill holes for Measured Resources, which corresponds to [redacted]. This is [redacted] the area of influence WGM used for the same classification level of a resource with far more geological complexity (as described above). WGM simply cannot credibly say that the Don Diego deposit fails to qualify as a resource because it does not meet an arbitrary and inapplicable standard that WGM itself does not use in its own non-contentious practice.

(ii) Evidence of Continuity: Geostatistics and Variograms

400. WGM's insistence on the use of arbitrary, unrealistic, or non-existent standards for mineral resource estimations is not limited to drill hole sample spacing. Another area

950 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 80.
951 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 6.
952 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 5.
953 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 80.

where it advances similar claims relates to the use of geostatistical techniques called variograms. Variograms are statistical functions modelled by computers that analyze the data sets of samples from a mineral deposit and measure how much any two samples will vary depending on the distance between them.[954] Samples taken far apart will tend to vary more than samples taken close to each other.[955]

401. In geologically simple, homogenous deposits with high continuity, variograms will show that samples do not vary substantially in certain directions even over long distances, while in geologically complex deposits with low continuity, variograms will show that samples may vary substantially even over small distances. Variograms are used to create "search ellipses," which quantify the distance across which one sample may be expected to be similar to, or to "influence," another sample. These can be used to define areas of influence based on statistical confidence around drill hole samples when classifying mineral resources.[956]

402. WGM states that the NI 43-101 Technical Report does not contain "[e]vidence that geostatistical methods such as variograms were used to evaluate spatial statistics for the project," and that therefore, "WGM finds the continuity assumptions for the deposit to be unsupported."[957] As an initial matter, WGM does not cite any source or mineral industry standard as authority for its unsupported suggestion that the use or presentation of variograms is a mandatory prerequisite for defining and classifying mineral resources. Nor could it do so, because no standard requires this.

403. Moreover, WGM itself has issued at least one NI 43-101 Technical Report that declares phosphate deposits as mineral resources and estimates volumes without presenting statistical conclusions from variograms. For example, in the abovementioned report where WGM declared and classified phosphate resources in Sichuan Province, China, WGM wrote that while "[v]ariograms were generated for each deposit to determine if

954 Selby ER2, ¶ 42, fn. 51. *See also* MP Geostatistics ER, pp. 25, 56.
955 MP Geostatistics ER, pp. 25.
956 MP Geostatistics ER, pp. 6, 25-26; Selby ER2, ¶ 62.
957 WGM ER, ¶¶ 65-66.

grade distribution trends exist," ultimately, "there are insufficient data to produce meaningful conclusions about sample dependence at either deposit."[958] Instead, WGM relied on factors such as its "years of world-wide experience with sedimentary phosphorite deposits"[959] to determine areas of influence around samples and estimate and classify resource volumes.

404. Crucially, WGM's surface-level criticism regarding the NI 43-101 Technical Report's lack of variograms or geostatistics does nothing to impugn the integrity of the extensive underlying geological sample data for the Don Diego deposit that was in existence at the Date of Valuation and collected in the NI 43-101 Technical Report, which any sophisticated investor or would-be acquiror would have analyzed as part of its due diligence.[960] Indeed, the contemporaneous Project resource evidence conclusively establishes the size of the Don Diego deposit and, if anything, re-enforces that the resources outlined in Mr. Lamb's NI 43-101 Technical Report are highly conservative.

405. If Compass Lexecon's hypothetical investor at the valuation date had commissioned a geostatistical analysis of the Don Diego drill hole sample dataset and generated variograms to quantify the resource's continuity as part of its due diligence on then-existing data, the results would have looked like the accompanying expert report from Mining Plus, and would have reiterated what was already known about the deposit at the time—that it was a strikingly homogenous resource just waiting to be recovered.

406. Here, Mining Plus was tasked with applying geostatistical analysis to the 2013-2014 Don Diego drill hole sample dataset that formed the basis for the NI 43-101 Technical Report. The purpose was to use variography to validate the robustness of Mr. Lamb's conclusions regarding resource continuity and his associated classifications and volume estimates, while also using geostatistical software to model the resource as a means to further validate existing volume estimates.

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958 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 89.

959 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 89.

960 Lomond & Hill ER2, ¶¶ 6.16-6.17.

407. As can be seen from their report, Mining Plus' geostatistical analysis confirms that the Don Diego resource is [redacted][961] Mining Plus further concludes that [redacted][963]

408. Mining Plus found that the variogram range along the deposit's strike is [redacted] long for the commercial-grade resource, while across strike,[964] the variogram range is [redacted] long for the commercial-grade resource. Under these circumstances, Mining Plus determined that "the resource categories proposed by H Lamb in the NI 43-101 could be reasonably extended to half of the variogram range for Measured Resources and a full variogram range for Indicated Resources."[965] In other words, these geostatistical findings demonstrate that Mr. Lamb took an extremely conservative approach in quantifying and characterizing the Don Diego deposit's resources.

409. WGM's opinion that "even the classification of resources as Inferred [is] questionable,"[966] is entirely baseless. If anything, the geostatistical analysis show the NI-43-101 Technical Report *underestimates* "continuity of the mineralisation in the deposit," and *under-reports* Measured and Indicated Resources.[967] More specifically, "[redacted] of the tonnage of the [commercial grade resource] has a high enough confidence to be classified as Indicated or Measured based on sample spacing."[968] As Dr. Selby notes, on this basis "the

961 MP Geostatistics ER, p. 26. "Along strike" means along the length of the trend of the deposit, which follows the northwest to southeast rocky outcropping feature on the seabed in the Don Diego Concession area.
962 MP Geostatistics ER, p. 26.
963 MP Geostatistics ER, p. 26.
964 "Across strike" means across the trend of the deposit.
965 MP Geostatistics ER, p. 31. [redacted]
966 WGM ER, ¶ 51.
967 MP Geostatistics ER, p. 51.
968 MP Geostatistics ER, p. 51.

CGR [commercial-grade resource] Indicated and Measured Resource increases from the estimate of 327 million tonnes in the NI 43-101 to over [redacted]."[969]

410. Using volumetric techniques independently from both Mr. Lamb's model and Dr. Selby's approach, Mining Plus arrives at similar conclusions to both in calculating the total volume of the resource.[970] Moreover, applying its geostatistical continuity analysis to the high-grade resource, Mining Plus further reinforces Dr. Selby's conclusions regarding the volume of high-grade resource available for extraction in Phase I of the Project.[971]

411. In sum, not only is WGM wrong in asserting that variograms are required to define and classify resources (as shown by, *inter alia*, its own NI 43-101 Technical Reports that fail to do so when declaring resources), but using variograms here only reinforces what any geologist looking at the Don Diego data would understand at first glance—that its uniformity and size renders it a remarkably rare phosphate deposit.

(iii) Resource Data

412. WGM's opinion and conclusions regarding the resource data underlying the Don Diego deposit are also deeply flawed. For example, WGM misses the mark when it complains that "[c]ritical data related to chemical assays is missing," stating that analysis for elements such as fluorine, cadmium, and strontium have been completed "for only some samples," and speculating that there are "potentially deleterious elements that may be at sufficiently elevated levels to affect the saleability of the mined concentrated phosphate product, which "may also present environmental issues related to effluents related to the mining and processing of phosphate sediments."[972]

413. First, as Mr. Gruber observes, WGM's critique here does not reflect industry standards because assays for such elements are used for commercial phosphate rock, not *in situ* resources.[973] In Mr. Gruber's view, "based on prevailing phosphate industry standards,

969 Selby ER2, ¶ 62.
970 MP Geostatistics ER, p. 42. *See also* MP HGR ER, p. 40.
971 MP Geostatistics ER, p. 49.
972 WGM ER, ¶ 60.
973 Gruber ER2, pp. 4-5; Agrifos ER, ¶ 25.

the chemical assays of the *in-situ* resources, as reported in Tables 17-1, 17-2, and 17-3 on page 67 of the NI 43-101 Technical Report, are sufficient for *in-situ* resources."[974] This is confirmed by none other than WGM's own NI 43-101 Technical Reports, which fail to include *any* data for these elements while declaring and classifying phosphate mineral resources.[975]

414. Putting aside WGM's theoretical issue-spotting exercise that highlights the "potential" for environmental or marketing risks in a general sense, WGM also fails to point to any sample test results that actually suggest these risks may materialize in this deposit. WGM fails to acknowledge the Project's extensive ecotoxicology testing that showed no toxicity from Don Diego sediment.[976] As Dr. Selby notes, not only are any deleterious elements "present only in naturally occurring concentrations," but equally importantly, WGM also completely ignores the Project's operations, including the Eco-tube and the no-overflow dredging mode, which mean that even if toxic elements were somehow present in harmful concentrations, "[n]o [such] elements will be available to be widely dispersed by currents as the sediments are directly re-deposited on the sea bed and are not released at the sea surface to form a plume through the water column."[977]

415. Similar deficiencies infect WGM's insistence that there must be continuity studies of other common elements and features in phosphate deposits beyond P_2O_5, namely "SiO_2

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974 Gruber ER2, p. 5.

975 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 72 (although in some cases, analyzed constituents "can include . . . F [fluorine], Cl- [chloride], Cd [cadmium], . . . [f]or the Shi Sun Xi drill holes only the 'basic' analysis group was run on each sample and consists of results for only P_2O_5, acid insoluble (H.P.) and SiO_2," while "[w]ith regard to all of the trench samples from both properties, only the P2O5 analyses have been presented for review"). Indeed, WGM was aware of extraordinarily high levels of arsenic in this particular phosphate deposit, yet nevertheless determined to declare Mineral Resources: WGM noted that "[t]here was no evidence that elements like arsenic had been tracked in the operation from the phosphate rock, waste products and possible releases to the environment," and that "[t]wo WGM composite samples . . . returned arsenic (As) results of 16 and 30 ppm respectively." **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 12. As a point of reference, the latter reading is 3,000 times higher than the United States Environmental Protection Agency's limit for arsenic in drinking water, which is 0.01 parts per million (ppm). *See* **C-0452**, Arsenic Fact Sheet, U.S. Department of Health and Human Services, Public Health Service Agency for Toxic Substances and Disease Registry, August 2007, p. 2.

976 **C-0002.02**, MIA, 21 August 2015, Annex 2 and reports cited in Claimant's Memorial 96-99.

977 Selby ER2, ¶ 26.

phosphate [sic], Fe_2O_3, Al_2O_3, MgO, CaO and density."[978] Yet again, WGM invents, without support, a requirement for declaring mineral resources that is not industry-standard, while also neglecting to review the actual data sets or to identify any existing data that would suggest an unusual risk in this regard.

416. As Mr. Gruber observes, WGM overstates the requirements for assessing continuity of deposit components in order to estimate a resource. Setting aside the overwhelming evidence of deposit homogeneity at Don Diego (which WGM does not address), variations among chemical components are commonplace in the phosphate industry and are addressed in practice through flexible processing plant design and operations, as well as selection of mining locations.[979] Variations within a deposit are also addressed in ranges of variances included in phosphate rock supply contracts.[980] Indeed, the proposed beneficiation process will alter the *in situ* deposit chemistry to become a product chemistry, thereby increasing the P_2O_5 and reducing the other five components. These are likely all reasons why WGM has declared and classified phosphate mineral resources in its own NI 43-101 Technical Reports without reference to the continuity of any of these common deposit components—indeed, in some cases without even having *raw assay data available to review* for these components.[981]

417. WGM also issues an outlandish standard for bathymetry measurements[982] when it claims that "[m]odelling of phosphate beds and waste materials as well as defining sedimentary strata for the deposit will likely require a topographic accuracy range of 1 to 2 centimetres

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978 WGM ER, ¶ 63. There is no molecule called "SiO_2 phosphate," but presumably this is intended to refer to silicon dioxide (SiO_2), or silica quartz, a major component of sand. *See* Gruber ER2, pp. 5-6.

979 Gruber ER2, p. 6.

980 Gruber ER2, p. 6.

981 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 72 (stating that while generally "a number of constituents are analyzed on each and every sample" including "P_2O_5, CaO, SiO_2, MgO, Fe_2O_3, Al_2O_3," in this case, "[w]ith regard to all of the trench samples from both properties, only the P_2O_5 analyses have been presented for review" and with regard to "[t]he analyses for the samples collected underground on both properties, only P_2O_5 and Fe_2O_3 were completed"). This is in contrast to the Don Diego Project, which generated assay results for all of the above components in each of [redacted] tested from across the resource.

982 Bathymetry measures the surface terrain a used to generate three-dimensional models of a deposit's surface.

or less, particularly if the project advances to the feasibility study level."[983] Aside from the fact that WGM appears to be generating, without substantiation, a requirement for a feasibility study level of development as opposed to the PFS level of development at Don Diego,[984] it is also opining on offshore mineral survey requirements, a field in which it has no discernible experience. As Dr. Selby states, "the bathymetry data acquired for the Don Diego Phosphorite Project uses an industry-standard approach which is consistent and is considered fit for purpose with comparable marine mineral and dredging investigations around the world."[985]

418. Finally, Respondent's claim that ExO's decision to release 70% of the Don Diego Concession shows that the Project is speculative and unsustainable is nonsense.[986] As Mr. Gordon explains: "We applied to reduce the size *because* our exploration work had identified the most phosphate rich areas for development, and those areas were so continuous and homogeneous that it makes Don Diego one of the largest phosphate deposits in the world. Based on that work, we had also applied for, and obtained, two additional Concessions, one to the north of the original Concession area and the other to the south, the year before."[987] Mr. Gordon adds that "[t]here was no reason for us to hold on to more marginal areas of the original Concession, especially when they happened to be closer to gray whale migration routes and coastal foraging areas for sea turtles. Since we did not plan to target those areas for commercial production, anyway, releasing them also made sense from the perspective of the MIA by reducing the perceived environmental footprint of the Project. I say "perceived" because the actual area of dredging would only have been 1 km^2 per year, which is a small fraction of the Concession area and an even smaller fraction of the Gulf of Ulloa."[988]

983 WGM ER, ¶ 61.
984 Selby ER2, ¶ 29.
985 Selby ER2, ¶ 30.
986 Respondent's Counter-Memorial, ¶¶ 122-125.
987 Gordon WS2, ¶ 48.
988 Gordon WS2, ¶ 49.

419. Overall, WGM's claims regarding the Don Diego data sets are an abstract issue-spotting exercise—they describe general risks but fail to identify any actual concerns (material or otherwise) based on the existing assay data. In the absence of any such concerns, coupled with the fact that the Don Diego Project data and analysis far exceeds the work performed and results obtained in deposits that WGM has certified as resources in the past, it is clear that Don Diego's mineral resource classifications remain valid.

(iv) Modifying Factors

420. WGM's pervasive and inappropriate double standard persists in its assertion that the NI 43-101 Technical Report is deficient because it "fails to meet . . . the requirements of the general CIM Mineral Resource and Mineral Reserve guidelines," and "[i]n particular, . . . [n]o consideration of the Modifying Factors has been applied to the classification of resources by Mr. Lamb to support their classification as Indicated or Measured."[989] Modifying factors, as described in the CIM Best Practice Guidelines for Estimation of Mineral Resources and Mineral Reserves, are factors that demonstrate that "eventual extraction could be reasonably justified" and include elements such as mining and processing technology, metallurgical testing, environmental attributes, and market factors.[990] The CIM Best Practice Guidelines, however, do not require modifying factors to be applied to a mineral deposit in order for it to be classified as a mineral *resource;* rather, as the Guidelines clearly state, "modifying factors must be applied to the Mineral Resource estimate" in order for those resources "[t]o be considered a Mineral Reserve."[991]

421. WGM's own practice in declaring phosphate mineral resources bears this out and again underscores that it is applying a double standard. In one WGM-issued NI 43-101 Technical Report that involved "the reporting of phosphorite Resources"[992] in a manner that it

989 WGM ER, ¶¶ 47-48.

990 **C-0420**, CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, 29 November 2019, p. 29.

991 **C-0420**, CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, 29 November 2019, p. 29.

992 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 87.

asserted was "CIM compliant,"[993] WGM explicitly stated that "[n]o associated mining, metallurgical, economic, marketing or environmental studies have been referenced in the preparation of these Resources" and that "[t]he conversion of the phosphorite Resource to Reserves will require," among other things, "application of the modifying factors."[994]

422. What is more, even though it was not required for Don Diego to be considered a Mineral Resource under CIM standards, the most important modifying factors for this Project *actually were* investigated and addressed before the Date of Valuation. As noted in the sections below, Odyssey and its dredging and processing contractor Boskalis carried out substantial planning and studying, including with independent experts, in order to de-risk the Project. This work included developing and refining engineering studies, plans, and flowsheets to PFS level for both mining and processing; estimating operating and capital costs to PFS level; identifying environmental risks and implementing technical solutions to minimize or eliminate them; consulting with local officials and stakeholders; estimating pricing and market opportunities with reference to then-existing data from global phosphate market leader CRU; performing flotation testing with independent laboratories; performing extensive metallurgical tests, including phosphoric acid acidulation tests, with industry leaders such as K-Tech and Jacobs Engineering; and collaborating with potential customers, such as Fertinal and PEMEX, including demonstrating the suitability of Don Diego phosphate rock products for their industrial processes. WGM, however, acts as though none of this evidence exists, and simply treats the June 2014 NI 43-101 Technical Report as if it existed in a vacuum, without any of the subsequent work performed in the following nearly two years before the MIA was wrongfully denied.[995]

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993 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 12 ("These estimates used are CIM compliant.").

994 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, p. 20.

995 This extensive work also answers the Respondent's and WGM's superficial argument that the NI 43-101 Technical Report states that the Project is in the "exploration stage" and therefore cannot be qualified as a PFS-level project. (WGM ER, ¶ 56.) To begin with, WGM omits the fact that the NI 43-101 Technical Report states: "The project is in a mature exploration stage and progressing toward being reclassified as an early stage development project." **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 14.

(v) WGM's Public Disclosure Rule Fallacy

423. Finally, WGM's efforts to critique the NI 43-101 Technical Report often rest on formalistic, hyper-technical criticisms that ignore Mr. Lamb's expertise, the quality of the underlying data, and the reality of the commercial circumstances insofar as the report was prepared for private investment and production decisions, not to satisfy formal public disclosure rules. As Mr. Fuller notes, "Mexico's argument appears built on a faulty assumption that all of the formal CIMVAL and VALMIN Code reporting requirements are necessary before a deposit can be considered a resource for valuation purposes, or are necessary to conduct a valid internal or private forward-looking income-based valuation."[996] Mr. Fuller points out that "[t]his view conflates a public report on economic viability with a company's internal processes and assessment," adding that a company such as Odyssey would use a DCF model based on the NI 43-101 Technical Report and associated business planning to decide whether to proceed with the next phase of the Project, and that "[w]hether or not the Technical Report or business planning documents meet the public reporting rules highlighted by WGM is a separate and unrelated topic."[997] In Mr. Fuller's wide industry experience, "the idea that such an assessment would only be based on public reports is highly impractical and, frankly, nonsensical."[998]

424. When viewed in this light, WGM's complaint that the NI 43-101 Technical Report uses the term "ore" to refer, in a Mineral Resource report, to the commercially valuable material to be extracted from the phosphate deposit[999] appears artificial and pedantic. As Dr. Selby observes, the use of the term here "is not misleading as the QP clearly states his assumptions and goes on to outline the additional requirements needed to more comprehensively address technical, development and production issues."[1000] And the

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Moreover, WGM uses this argument as though none of the subsequent nearly two years of project development work had taken place.

996 Lomond & Hill ER2, ¶ 6.1. Mr. Fuller notes that "[t]his is clear from Mexico's statement that if a document 'is not in compliance with regulatory disclosure requirements," it "consequently cannot be used for a financial analysis.' (C-M ¶ 657, quoting WGM ¶ 40)."

997 Lomond & Hill ER2, ¶¶ 6.2, 6.4.

998 Lomond & Hill ER2, ¶ 6.4. Agrifos ER, ¶ 12, fn 1.

999 WGM ER, ¶¶ 72-73.

1000 Selby ER2, ¶ 91.

criticism rings especially hollow when considering that WGM uses the term "ore" in exactly the same way in its own NI 43-101 Technical Reports classifying phosphate deposits as Mineral Resources.[1001]

425. Likewise, WGM's complaints that the NI 43-101 Technical Report does not have enough "labelled and annotated maps of data" or "plans or cross-sections of mineralization," or that the maps are of "poor quality," are similarly unconvincing.[1002] Aside from the fact that "any potential investor or other interested party would carry out further analysis of the mineral resource data irrespective of the quality of the cartography, the visualisation through cross-sections or the use of the word 'ore'," [1003] Dr. Selby adds that visuals such as cross-sections are far less useful where, as here, the deposit [redacted]:[1004]

[redacted]

426. Consequently, as Dr. Selby aptly concludes, WGM's formalistic criticisms regarding compliance with NI 43-101 guidance "are not a valid reason to discredit or disregard the evidence and transparency which the summary report offers the informed reader."[1005]

427. The NI 43-101 Technical Report resource volume estimate and classifications remain accurate, robust, and independently verifiable using contemporaneous data with techniques ranging from contour modelling performed by Dr. Selby (which WGM

1001 **C-0375**, WGM AsiaPhos NI 43-101 Technical Report, 28 March 2014, *e.g.* pp. 11 ("The results of the analyses confirmed the general tenor of the grade and specific gravity of the ore"), 74 (tests using "standard analytical techniques for phosphate ores"), 96 ("the ore" belongs to the "Shi Fang Type"), 122 ("The drill core will be sampled . . . [to] provide for more accurate estimates of the ore grade to be mined").

1002 WGM ER, ¶¶ 72

1003 Selby ER2, ¶ 93.

1004 Selby ER2, ¶ 89.

1005 Selby ER2, ¶ 92.

conspicuously ignores) to geostatistical estimation performed by Mining Plus. None of WGM's comments alters this conclusion.

b. Mexico and Its Experts Do Not Address Claimant's Evidence of Production Feasibility and Operating and Capital Expenditures

428. The Project's technical feasibility, production rates, and OPEX/CAPEX cost elements of the DCF calculation are uncontested. WGM engages in a generic mining issue-spotting exercise instead of analyzing (and sometimes just acknowledging) the evidence Claimant has actually put forward. Further, much of what WGM claims is unsupported or demonstrably false. For example, WGM's contention that the Don Diego Project envisioned novel production concepts and unproven technology is asserted without even so much as a glancing reference to the comprehensive technical evidence included with Claimant's Memorial and is wholly mistaken.

429. All told, WGM devotes as little as four paragraphs to such engineering and technical questions. It is as though the hundreds of pages of evidence from Mr. Bryson, Boskalis, Dr. Selby, Dr. Sheehan, Mr. Gruber, and Mr. Fuller never existed.

430. Moreover, even a cursory review of Claimant's evidence and expert reports would have demonstrated to WGM that its questions were either irrelevant or among the earliest and most obvious questions anticipated and addressed during the development and engineering of the Project, meaning that they could not pose any of the risks implied by WGM.

(i) Dredging as a Means of Extracting Marine Minerals Is a Proven Technology with Well-Understood Costs

431. In spite of WGM's general and unsupported allegation that the Don Diego Project "involves novel production concepts and unproven technology,"[1006] WGM fails to identify any aspect of the proposed extraction method of dredging that is novel or unproven, and leaves Claimant's technical evidence and cost estimates wholly unrebutted.

[1006] WGM ER, ¶ 102.

432. In its Memorial, Claimant submitted evidence from numerous leading dredging specialists to demonstrate that dredging is a proven technology with well-understood risks and costs. Deltares, a world-leading environmental consultant in the field of dredging, opined that "[t]he proposed process of the phosphate sand extraction in the ExO project is a combination of standard techniques that are common in the dredging industry, whether for maintenance or capital dredging or mineral extraction."[1007] Deltares emphasized that the proposed dredging vessel technology, the trailing suction hopper dredger (TSHD), "is a well-established dredging technique"[1008] that "can work up to water depths larger than 100 m," and it is "already a proven, fully developed, technology at these depths."[1009] Deltares also added that given the capabilities of the TSHD for dredging sea floor sand and aggregate, it "is considered as an optimal choice for the specific conditions of the ExO project phosphate sand extraction. Economically and environmentally it can be stated that this is the best choice from all available developed extraction technologies."[1010]

433. Dr. Ian Selby, one of the world's leading marine geologists of the continental shelf and slope, who has directed or overseen the extraction of hundreds of millions of tonnes of marine minerals with dredging programs around the world, including for the UK Government, the Hong Kong Government, and the largest marine aggregate dredging company in the world,[1011] carried out an extensive independent review of the proposed dredging method and plan for the Don Diego Project. He concluded that "the proposed utilisation of a TSHD for the Don Diego Phosphorite Project is consistent with numerous, proven applications for the dredging of similar deposits, at similar production rates, operating in similar conditions around the world."[1012] Dr. Selby stressed that "mineral sand production by the TSHD at the volumes proposed in the Don Diego Project is

1007 Deltares ER1, Section 3.1, p. 13.
1008 Deltares ER1, Section 3.1, p. 13.
1009 Deltares ER1, Section 3.3, p. 15.
1010 Deltares ER1, Section 3.3, p. 15.
1011 Selby ER1, ¶¶ 6-9.
1012 Selby ER1, ¶ 103.

absolutely routine and has been practiced in environments directly comparable to that of the Don Diego Concession for many decades."[1013]

434. Mr. Craig Bryson, the engineering Project Manager and principal mining engineer for the Don Diego Project, who has over 20 years of experience designing, implementing, and managing both terrestrial and marine mining projects worldwide, including ocean floor diamond dredging and continental shelf marine aggregate dredging, observed that all of the system elements in the Project "involved pre-existing, known technology, including all aspects of TSHD dredging performance, from dredging to backflowing, with and without overflow."[1014]

435. As Mr. Gruber emphasizes, phosphate dredging and particle sizing and processing on vessels has been performed since at least the 1890s.[1015] For example, phosphate river pebble mining began in Florida in 1888; as shown in the following image from the State Archives of Florida,[1016] "the river pebble was mined by dredges and the dredged ore was washed by trommel screens mounted on the dredges to recover the concentrate (coarse phosphate) and reject the fine waste."[1017]

1013 Selby ER1, ¶ 132.
1014 Bryson WS1, ¶ 214.4.
1015 Gruber ER2, pp. 10-11.
1016 **C-0367**, Phosphate dredge boat, Florida Memory, State Library and Archives of Florida (circa 1890), *cited in* Gruber ER2, p. 10.
1017 Gruber ER2, p. 10.

As such, Mr. Gruber notes that "[t]he Don Diego production concept mimics technology that was proven over 100 years ago,"[1018] and concludes that "[t]he fact that WGM considers dredge mining of phosphate and processing phosphate ore on a floating plant to be novel and unproven confirms that they are not familiar with the Phosphate Industry."[1019]

436. Claimant's witnesses also emphasized how Odyssey's selection of Boskalis as the dredging and offshore processing contractor underscored the high reliability of the production, OPEX, and CAPEX estimates because they were drawn from Boskalis' vast trove of experience with this existing technology. As Dr. Selby explains, among the "notable world-leading dredging and offshore contractors that operate on a global basis[,] . . . Boskalis is one of the largest marine contractors, with a strong reputation for delivery of dredging and infrastructure projects in a wide range of marine environments around the

1018 Gruber ER2, p. 10.
1019 Gruber ER2, p. 10.

world."[1020] Dr. Selby added that "[b]y selecting Boskalis as a partner, there is a clear benefit to the Don Diego Project arising from Boskalis' real-world, diverse and practical operational experience leading directly to an increased level of confidence in the Project. As a result of this experience, . . . I believe that the risks arising from the contractor's ability to deliver their forecast marine mineral production are low."[1021]

437. Dr. Sheehan, a highly-respected chartered structural engineer with a PhD in dredged material management and extensive experience in project management and feasibility studies for dredging projects worldwide, agreed, noting that "[t]he contractor in question, Boskalis, is among the world's largest and most experienced dredging contractors. They would have a detailed understanding of the costs of operating their own vessels and the inherent dredging and project cost and production parameters for large-scale and long-term dredging projects, such as that involved with the proposed Don Diego Phosphate Mining Project. Their involvement also brings a higher degree of credibility and confidence to provided estimates than other less experienced dredging contractors."[1022]

438. In conducting his independent review of Boskalis' production and cost estimates, Dr. Sheehan found them to be conservative: "We generally consider that the proposed vessel may be able to achieve more favourable daily production than considered for this estimate," which "would result in reduced operating costs."[1023] Dr. Sheehan validated Boskalis' production, CAPEX, and OPEX estimates as conservative and as meeting a Pre-Feasibility Study level of confidence,[1024] which Dr. Selby endorsed.[1025]

439. WGM, by contrast, has no dredging experience and no experience with offshore or marine resource development projects. WGM also does not consider Boskalis' participation in this Project as a factor in whether basic risks were considered—indeed, as Mr. Fuller

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1020 Selby ER1, ¶ 91. As Mr. Bryson adds, "Boskalis was (and is) a company with enormous resources," noting that it "owned and operated over 1,100 vessels around the world, with over 15,600 employees." Bryson WS1, ¶ 39.

1021 Selby ER1, ¶ 92.

1022 ADBP ER, Section 3.3, p. 3.

1023 ADBP ER, Section 3.3, p. 4.

1024 ADBP ER, Section 3.3, pp. 4-5.

1025 Selby ER1, ¶¶ 123-133.

notes, "Boskalis is mentioned only once, in passing, in the entire WGM Report."[1026] WGM's very limited dredging-related comments in its report merely flag a handful of potential abstract risks that were clearly recognized and addressed by Boskalis, and explicitly and extensively discussed in Claimant's evidence accompanying the Memorial, which evidence WGM simply ignores.

440. For example, WGM speculates that "[t]he average operating density of the dredge could substantially impact project capacity and capital cost,"[1027] and that "if the cycle time . . . is understated this could substantially impact the project capacity and the capital and operating costs."[1028] These tautological observations simply describe the generic risk that if a mine fails to operate as expected, production and costs will be affected, but WGM fails to explain or quantify the nature of these unspecified risks as applied to this Project, and does not otherwise study these issues or explain why testing would be required on processes that are decades old and "absolutely routine."[1029] More importantly, WGM ignores the extensive and concrete discussion of operating density changes resulting from no-overflow dredging, the calculations of projected cycle times, and the potential impact of both on production by Dr. Selby[1030] and Mr. Bryson.[1031] As Dr. Selby states, these questions "have been recognised and addressed both by Boskalis, my First Report and by ADBP," adding that both he and Dr. Sheehan already concluded they have been "fully taken into account in the estimation of production rates."[1032] Dr. Selby adds: "WGM do

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1026 Lomond & Hill ER2, ¶ 4.3 (citing WGM ER, ¶ 110). It is worth noting that Boskalis continues to serve as the global standard-bearer for dredging and marine services, including in unprecedented, high-stakes circumstances. For example, when the 400m container ship *Ever Given* became grounded on 23 March 2021, blocking all traffic in the Suez Canal, the Suez Canal Authority turned to Boskalis and its subsidiary SMIT Salvage to rescue and re-float the stranded vessel. In a successful complex operation that saw the 224,000 tonne *Ever Given* freed in less than a week, Boskalis managed to dredge 30,000 cubic meters of sand from under and around the ship. *See* **C-0454**, Boskalis Press Release: "Suez Canal Unblocked: 'We Pulled It Off!,'" 29 March 2021; **C-0456**, V. Yee, et al., "'We Pulled It Off!' After Days of Arduous Labor, a Ship Is Free, and Salvagers Are Triumphant," The New York Times, 29 March 2021; **C-0455**, V. Yee, "Ship Is Freed After a Costly Lesson in the Vulnerability of Sea Trade," The New York Times, 29 March 2021.

1027 WGM ER, ¶ 104.

1028 WGM ER, ¶ 104. *See also* WGM ER, ¶ 108 (also regarding no-overflow operating density).

1029 Selby ER1, ¶ 132.

1030 Selby ER1, ¶¶ 104-115, 123-124.

1031 Bryson WS1, ¶¶ 184, 192-193.

1032 Selby ER2, ¶¶ 99-100.

not address this analysis or evidence in their report."[1033] WGM also does not address the large contingencies and inherent conservatism built into Boskalis' estimates, as noted above, which ensures a "high level of confidence in these figures."[1034]

441. WGM also imagines that "[t]he distance from shore will require the support of helicopter service for emergencies as well as general transport,"[1035] but then drops this two-line point and moves on to its next topic without citing a source, explaining the basis for the assertion, attempting to quantify its cost implications, or otherwise developing it into any type of sustained inquiry. In any event, Dr. Selby explains that WGM's speculation is not well-founded in practice: "In my experience, dredgers and associated marine plants are designed to continuously and independently operate on continental shelf-based projects, wherever they are around the world. For example, dredgers carry extensive spares and maintenance is strategically managed and occurs at planned intervals. I am not aware of any project, which lies so close to shore and to port facilities, that has required a bespoke helicopter service, in addition to national coastguard and/or air/sea rescue facilities. In my view it is unreasonable to assume the need for a helicopter to be included in the costings."[1036]

442. Ultimately, WGM's assertion that the Project carries risk because it involves "novel production concepts and unproven technology" is unsupported—and indeed, unsupportable—in the context of dredging methods that have been known for many years and practiced constantly by one of the world's largest dredging contractors.

1033 Selby ER2, ¶ 100.

1034 ADBP ER, Section 3.3, p. 5. WGM also seems to suggest that the initial project proposal by Boskalis' dredging competitor Jan de Nul implied substantial risks and the requirement for pilot dredge testing, *see* WGM ER, ¶ 104 (citing **C-0214**, Jan De Nul Tender Proposal, 25 May 2013), but this is clearly incorrect. Dr. Selby notes that Jan de Nul "concludes that there are limited technical challenges to dredging the Don Diego resources" (Selby ER2, ¶ 99), while Mr. Bryson stressed that the Jan de Nul proposal "stated that 'overburden (mainly sand and silt) is an easy to remove type of soil by classic suction-dredging techniques' and that '[t]his is equally valid for the phosphorite sand deposit: the hydraulic dredgeability seems to present no substantial problems." Bryson WS1, ¶ 42 (quoting **C-0214**, Jan De Nul Tender Proposal, 25 May 2013, p. 9).

1035 WGM ER, ¶ 107.

1036 Selby ER2, ¶ 102.

(ii) Phosphate Processing Methods Are Proven Technologies with Well-Understood Costs

443. WGM's anemic questioning of the Project's phosphate processing component suffers from the same deficiencies as its cursory discussion of the dredging component.

444. For example, WGM conjectures that product quality could be impacted if particle separation components like hydrocyclones do not work properly,[1037] but again, if fails to develop this hypothetical into anything resembling an analysis or expert inquiry. Without even attempting to offer a detailed study of this risk, such as its likelihood or its potential impact on production or cost, WGM relegates its questions to the realm of generic, speculative musings. Indeed, WGM's main takeaway from this two-sentence critique is merely that the issue will "require some design arrangements,"[1038] which amounts to nothing more than a description of the process of developing a mineral resource project.

445. Likewise, WGM surmises that the disposal of tailings and overburden[1039] down the Eco-tube could necessitate extra costs to relocate the FPSP,[1040] but again fails to quantify or actually study this alleged risk. Further, WGM raises this question, like others, as though it were unearthing key, unconsidered project risks, whereas in reality, it is yet again merely pointing towards basic engineering topics that were addressed early on in the Project's development. As Dr. Selby observes, "the operational management of overburden has been clearly recognised by Boskalis at Don Diego and has been accounted for in its conservative production estimates,"[1041] adding that WGM has also failed to account for the fact that "the volume of overburden delivered to the FPSP [would have been] minimised through direct sea bed disposal by the TSHD, as explained in my First Report."[1042]

1037 WGM ER, ¶ 104.

1038 WGM ER, ¶ 104.

1039 Overburden refers to the top layer of material that must be removed to reach the source mineral.

1040 WGM ER, ¶ 109. The FPSP (Floating Process Storage Platform) is the secondary vessel on which the dredged material would be processed mechanically and to produce sized rock product and floatation feed.

1041 Selby ER2, ¶ 101.

1042 Selby ER2, ¶ 101. *See* Selby ER1, ¶¶ 111-113; Bryson WS1, ¶¶ 189-190, 193.

446. Whereas WGM devotes two sentences to questioning the assumption that [redacted] water/tonne is adequate for rinsing saltwater off the product towards the end of the process (again with no evidence, analysis, or sources), and objects that no test work was undertaken to validate this assumption,[1043] Mr. Gruber explains that an existing industry standard simulation equation addresses this question,[1044] the accuracy of which is borne out in practice through tests on similar phosphate rock.[1045]

447. This is before even considering that this topic was the subject of focused engineering work by Boskalis,[1046] and that the stated fresh water requirement reflected the absolute upper limit of what could have been needed given the likelihood that flotation feed would not require rinsing due to its subsequent flotation stage[1047]—two points that WGM also glosses over.

448. WGM also warns yet again in a general sense that lack of testing of "unproven processes and technology" can cause delays and cost overruns,[1048] but fails to identify a single element of the materials processing circuit that involved unproven or unknown technologies. In fact, as Mr. Fuller observes: "[t]he Project flowsheet is based on commercial off-the-shelf (COTS) technologies and equipment. . . . [Consequently,] i[n] the author's view, WGM overstates the technical risks associated with the level of testing, because the processing operations and technologies proposed for the Project are well understood, and the associated financial risks would be encompassed by expected

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1043 WGM ER, ¶ 105.

1044 Gruber ER2, p. 13 (citing **GG-0007**, "Chapter 28: How to Select and Size Filters," in: A.L. Mular and R.B. Bhappu, ed., *Mineral Processing Plant Design* (2d. ed. 1980), p. 585, Equation 7).

1045 Gruber ER2, p. 13 [redacted]

1046 Bryson WS1, ¶ 140.

1047 Bryson WS1, ¶¶ 200, 220. [redacted] Bryson WS1, ¶ 222.

1048 WGM ER, ¶ 106.

accuracy ranges for the Project's development stage. Further, the author is not aware of any obligation to run pilot studies when the unit processes are standard, COTS technologies."[1049] This renders WGM's high-level and generic reference to the likelihood of projects meeting "ramp-up schedules" across the mining industry purely academic.[1050]

449. Of note, the flowsheet includes sizing, classification, separation, and dewatering, which are all standard unit processes in marine and terrestrial aggregates and the minerals processing industry, including for phosphate projects around the world, and which have been previously deployed by Boskalis on various soil washing and decontamination projects as described in extensive detail by Mr. Bryson.[1051] As Mr. Bryson points out, Boskalis can draw upon not only its own "extensive experience since the 1980s with mechanical separation processes involving vibrating and static screening, hydrocycloning and hydrosizing of all kinds of dredged sediment," but also the deep experience of its longtime equipment suppliers and partners, Weir Minerals, B&D Process Equipment, DRA Global, SGS Bateman, and Metso.[1052]

450. The accumulation of phosphate processing knowledge and standardization of its industrial processes over the preceding decades, along with the Project specifications and flow sheets generated by Mr. Bryson and Boskalis, are what enabled Mr. Gruber to perform the exhaustive and accurate process simulation he described in his First Expert Report to validate Boskalis' engineering work and estimates,[1053] all the way down to the detailed equipment lists, including dimensions and capacities, for the FPSP.[1054] This is yet another aspect of Claimant's case that is met with silence by Respondent.

451. Mr. Gruber emphasizes that extensive knowledge already exists worldwide concerning the unit operations envisioned in this Project, and that vendors "can reliably predict the

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1049 Lomond & Hill ER2, p. 1, ¶¶ a, c.

1050 WGM ER, ¶ 106. Mr. Fuller adds that "WGM's statements that the technical risk with unproven processes and technology or lack of testing is a significant source of delays and overruns (WGM Report ¶106) are general and do not address this specific project or its proposed processes and technologies." Lomond & Hill ER2, ¶ 3.7.

1051 Bryson WS1, ¶¶ 32-34.

1052 Bryson WS1, ¶ 99.

1053 Gruber ER1, pp. 10-11, 16-17.

1054 Gruber ER1, pp. 25-27, Tables 15-17.

performance of their equipment based on the particle size distribution of the feed."[1055] He observes that equivalent processing technology "has been proven by plants in North Africa, the Middle East, Mexico, and Peru."[1056] Mr. Gruber also concurs with Mr. Fuller when emphasizing that these are all ultimately just "question[s] of variability, which would be expected to fall within the accuracy range of the engineering level for this Project at that time."[1057]

452. WGM also completely fails to address whether Boskalis' estimates of the CAPEX and OPEX costs for the materials processing component of the Project, which Claimant validated using detailed independent expert analysis, are reasonable. As Mr. Fuller notes, WGM refuses to acknowledge the existence of Boskalis' "+/- 25% estimates, which correspond to a PFS level of development as WGM notes," and which must be the starting point for any cost estimate validation work here.[1058] Instead, WGM proceeds to focus solely on the AACE cost estimate class of Mr. Fuller's independent validation as if Boskalis's work does not exist, and in so doing, "quotes [Mr. Fuller] out of context" or "misrepresent[s] [Mr. Fuller's] views on the level of project detail and the associated class of the AACE capital cost estimate achieved by Odyssey at the time of denial of project approval."[1059]

453. For example, WGM quotes Mr. Fuller out of context when writing: "In his report, Mr. Fuller states that 'The author is of the view that the level of project detail set out in the available documents is consistent with an AACE Class 5 estimate.'"[1060] WGM then states: "This class of estimate has an accuracy of -20% to +100%."[1061] This is not a fair use of the record and gives the false impression that Mr. Fuller believes the Don Diego Project's level of development corresponded only to a Class 5 level, which would not rise to the level of

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1055 Gruber ER2, p. 11.
1056 Gruber ER2, p. 11.
1057 Gruber ER2, p. 12.
1058 Lomond & Hill ER2, ¶ 4.3 (citing WGM ER, ¶ 41).
1059 Lomond & Hill ER2, ¶¶ 4.6-4.7.
1060 WGM ER, ¶ 40.
1061 WGM ER, ¶ 40.

a PFS level of confidence. Crucially, WGM omits to mention, much less address, the remainder of Mr. Fuller's paragraph 5.1.3, which reads:[1062]

> However, Boskalis states an estimate accuracy of +/-25% which would imply a Class 4 estimate. This lower estimate class would be consistent, in the author's view, with a contractor expert in such projects and drawing on an extensive internal database of costs and past projects that would not be made available externally. Moreover, as set out below, the Boskalis CAPEX estimate is corroborated as being reasonable through independent estimation.

454. Mr. Fuller confirms that WGM is misrepresenting the contents of his report, and adds that in other places, as well, WGM's report "is not an accurate presentation of the author's views on this subject"[1063] or is "misleading."[1064]

455. Pointedly, what WGM does not do is undertake any form of independent analysis or evaluation of Claimant's OPEX and CAPEX evidence, leaving it entirely unrebutted. Rather, it has resorted to an attempt to muddy the water with superficial questions that refuse to engage with, or acknowledge, the detailed evidence supporting Claimant's case. In the absence of any meaningful response from Respondent on these points, it is clear that the materials processing component of the Project was feasible, well-understood, and accurately costed.

(iii) Offshore Minerals Processing Is Also Proven, with Well-Understood Costs

456. WGM continues its pattern of avoiding Claimant's evidence related to the proven and well-understood technologies associated with the Don Diego Project when discussing

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1062 Lomond & Hill ER1, ¶ 5.1.3.

1063 Lomond & Hill ER2, ¶4.9. For example, WGM also misrepresents Mr. Fuller's expert testimony about cost accuracy ranges. WGM states "Mr. Lomond [sic] notes on page 13 of his expert report that Class 5 costs estimates, as defined by AACE, are designed for 'concept screening' purposes and cannot be used to support economic analyses." WGM ER, ¶ 40 (note there is no "Mr. Lomond"—Lomond is part of the company name). Mr. Fuller points out that this statement is not in his report: "On page 18 we do state that 'a Class 5 estimate based on internal database numbers and project team judgement may suffice for an internal scoping study but it is unlikely to satisfy the needs of external investors during a fund raising round' but this is clearly not equivalent to a statement that all Class 5 cost estimates are unsuitable for any economic analysis." Lomond & Hill ER2, ¶ 4.3.

1064 Lomond & Hill ER2, ¶4.10 n.10.

offshore and marine minerals and phosphate processing projects, focusing instead on two marine phosphate projects that have not progressed due to reasons irrelevant to the Don Diego Project. As a consequence, WGM leaves compelling feasibility evidence unaddressed while attempting to make comparisons to stalled projects that are facially invalid.

457. Mr. Bryson previously provided detailed evidence of some of the numerous advantages accruing to marine minerals projects in comparison to their terrestrial counterparts, including: (i) avoiding local conflicts and potential obstruction from nearby residents;[1065] (ii) avoiding substantial time and money spent building necessary infrastructure, including road and rail links and housing and facilities for workers;[1066] (iii) much faster time to initial production;[1067] (iv) avoiding substantial time and money spent digging mineshafts or removing overburden;[1068] (v) avoiding (in the case of the Don Diego phosphate sands) substantial time and money spent implementing rock crushing and grinding processes ("comminution") to pulverize rock into small particles to liberate valuable minerals;[1069] (vi) being able to access all or nearly all of the resource without concerns for mine stability and rock mechanics that can render even parts of proven reserves unrecoverable;[1070] (vii) flexibility in moving to a new mining location immediately, rather than having to build new roads and facilities to access a new location;[1071] (viii) extremely accurate dredging technologies permitting highly-targeted ore recovery;[1072] and (ix) an absence of legacy remediation costs coupled with project technology retaining residual value at the project's conclusion.[1073]

458. These observations were based on Mr. Bryson's participation in, and management of, numerous successful marine minerals projects over the years, including ocean floor

1065 Bryson WS1, ¶ 16.
1066 Bryson WS1, ¶ 16.
1067 Bryson WS1, ¶ 17.
1068 Bryson WS1, ¶ 17.1.
1069 Bryson WS1, ¶ 17.2.
1070 Bryson WS1, ¶¶ 19-21.
1071 Bryson WS1, ¶ 22.
1072 Bryson WS1, ¶ 23.
1073 Bryson WS1, ¶ 24.

dredging of diamonds in the South Atlantic Ocean off the coast of Namibia in water depths of 150 meters with an approximately 9-meter overburden[1074] and numerous marine aggregate dredging projects on the North Sea continental shelf. As Mr. Bryson demonstrates, the Namibian diamond dredging vessels ran particle separation processes equivalent to the Don Diego Project while offshore: "All of these materials processing technologies operated within their normal terrestrial parameters in this offshore context, which had similar sea conditions and an even greater range of vessel motion and platform acceleration due to the smaller nature of the vessels in question."[1075] Mr. Bryson adds that, given the project economics and resource characteristics with underwater diamond fields, "if there had been any significant issues with mechanical particle separation on a vessel, they would have been well known by the time this engineering design work for Don Diego was under development."[1076] Likewise, marine aggregate dredging projects, including those operated by Boskalis, also successfully use offshore particle separation technology.[1077]

459. Mr. Bryson also stresses that the technological and efficiency advantages of dredging minerals are often so compelling that companies such as "Iluka Resources, which is the biggest heavy minerals mining company in the world, and which now owns Sierra Rutile, spend[] billions of dollars and devote[] years to building inland artificial ponds just so [they] can dredge them."[1078] Artificial inland pond dredging is used specifically with phosphate deposits around the world, including by U.S. phosphate major Mosaic, which

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1074 Overburden is a layer of uneconomic, or waste, material covering an ore body in the ground. *See* Bryson WS1, ¶ 17.1.

1075 Bryson WS1, ¶ 101.

1076 Bryson WS1, ¶ 102.

1077 Bryson WS1, ¶ 38 ("Boskalis and its employees also had experience with closely analogous projects that involved offshore ocean dredging and particle separation. For example, Boskalis had performed (and continues to perform) numerous assignments in the North Sea aggregates industry. Those assignments involve dredging gravel and sand from the seafloor in the North Sea and separating the dredged material for use in the construction industry, returning the unusable size fractions to the seabed.").

1078 Bryson WS1, ¶ 17.3. [redacted] Bryson WS1, ¶ 18.

operates dredging ponds at numerous facilities, including their phosphate mine at Wingate Creek.[1079]

460. Nevertheless, Respondent and WGM ignore this evidence and instead focus on two marine phosphate projects—Chatham Rise, off the coast of New Zealand, and Sandpiper, off the coast of Namibia—that have not progressed for different reasons. The comparisons WGM seeks to make are not valid.

461. The elements Chatham Rise and Sandpiper have in common with Don Diego are that they also occur in the ocean and involve phosphates. Everything else about these projects—the geology, environment, resource characteristics, and other considerations—is different. As Dr. Selby states: "using these projects as analogies for the Don Diego Phosphorite project is misleading since it does not compare like for like – these two examples bear only a very limited resemblance to the Don Diego project in terms of their setting, the characteristics of their mineral resources and their extraction plans and production plans."[1080]

462. With respect to Chatham Rise, Dr. Selby explains:[1081]

> [P]hosphate resources are formed of a thin (up to 1m thick) discontinuous layer of phosphorite sand and of larger phosphatised chalk nodules (a spherical rock mass up to 15 cm across), all of which lie on an isolated bedrock platform 450km offshore, at a depth of around 450-450m. . . . This resource is challenging to explore and to accurately characterize, and potentially complicated to extract successfully. [redacted] The costs and challenges associated with Chatham Rise are compounded by the 250-450m depth, the discontinuous resource which creates potential complications associated with extraction techniques, and

1079 *See*, e.g., Gruber ER2, p. 11; **GG-0005**, The Mosaic Company, Form 10-K for the period ending 31 December 2018, p. 7 ("At our Wingate mine, we also utilize dredges to remove the overburden and mine the ore").

1080 Selby ER2, ¶ 11.

1081 Selby ER2, ¶ 12.

> the 400+km distance from shore, which creates greater exposure to more hostile oceanic conditions.

463. Dr. Selby adds that "WGM do not state why the Chatham Rock project environmental or economic factors are relevant to the Don Diego Phosphorite Project and I have seen no indication that any of these types of sensitivities exist in the case of the Don Diego project. The Don Diego project has a notably shallower setting, much smaller annual dredging footprint, does not lie in a protected marine conservation zone and has no comparable potential impacts on local habitats and ecosystems arising from its proposed production plans."[1082]

464. With respect to the Sandpiper Project, "the Sandpiper resources typically lie at depths of between 1800-350m, on an exposed, high-energy (wind and waves) coastal margin."[1083] Dr. Selby notes that the production process at Sandpiper differs from Don Diego because mineral processing is proposed to take place at a land-based facility, and that the design "requires creating a 1km diameter exclusion zone around [a discharge] buoy" that conveys the dredged slurry to the coastal buffer pond.[1084] This has created issues with the Namibian fishing industry, who object to the exclusion grounds and argue that the project is "in the heart of the fishing production area."[1085] Dr. Selby contrasts this situation with the Don Diego Project, where "the project design is based upon offshore mineral extraction and processing and does not incorporate elements that would impact near-shore marine activity."[1086] Comparing the two projects, Dr. Selby further notes that he is "unaware of any specific economic or environmental sensitivities associated with the Sandpiper Project that could be correlated with the Don Diego project, where extraction and processing operations are confined to a very limited offshore location, in a notably shallower marine environment which is characterized by comparatively benign sea conditions."[1087]

1082 Selby ER2, ¶ 13.
1083 Selby ER2, ¶ 14.
1084 Selby ER2, ¶ 15.
1085 Selby ER2, ¶ 15.
1086 Selby ER2, ¶ 17.
1087 Selby ER2, ¶ 17.

465. Respondent has offered no reasons other than speculation as to why these two unrelated projects could provide insight as to the capability of the Don Diego Project to operate successfully and profitably. Dr. Selby aptly synthesizes the logical conclusion: "a comparison of the Don Diego Project with either the deeper Chatham Rise or Sandpiper projects offers no particular insight into any risks or points of relevance, whether environmental, cultural or economic, associated with the development of the Don Diego Phosphorite deposit."[1088]

(iv) Claimant's Timetable for Starting Operations Is Reasonable and Appropriate for the Project Stage

466. Finally, WGM's and Quadrant's arguments regarding "ramp up" time[1089] and the start of operations are generic, based on a survey of dissimilar examples drawn from across the mining industry, and do not address Claimant's evidence.

467. Quadrant's assumptions are particularly unreasonable and premised on the manifestly incorrect presumption that the technology used in the Project would have been novel. As is clear from the discussion above, nothing about the technology in the Don Diego Project was novel—it combined two tested, established technologies, in respect of which Respondent and its experts have cited no evidence to the contrary. The "McNulty curves" article upon which Quadrant (and WGM) rely is "not applicable to the Don Diego Project and cannot be used to justify an extended ramp-up phase.[1090] This is because it was a study of ramp-up time in "[h]ydrometallurgical and pyrometallurgical projects," which "are much more complex (by at least an order of magnitude) than the simple dewatering, screening, and classification flowsheet proposed for the Don Diego Project. All of the 41 projects involved the extraction of a mineral or metal from the host rock by multiple unit processes including the addition of chemicals. By contrast, the Don Diego Project product is, essentially, [redacted]."[1091] Mr. Fuller notes that "[n]o project of similar low complexity

1088 Selby ER2, ¶ 19.
1089 WGM ER, ¶ 106; Quadrant ER, ¶¶ 41, 123.
1090 Lomond & Hill ER2, ¶ 6.11.
1091 Lomond & Hill ER2, ¶ 6.10.

to the Don Diego project (such as a wet plant processing mineral sands or iron ore using vibrating screens and cyclones) was included in the 41 project dataset."[1092] This article simply has no bearing on Don Diego, as it is accepted in the mining sector only "for the specific types of projects to which they apply."[1093]

468. Even if this article did apply to the Don Diego project, it explicitly states that the "Series 1" projects with the highest likelihood of quickly reaching their feed rate targets use "mature technology" and "[s]tandard types of equipment"—both of which apply to Don Diego—and perform pilot-scale testing only on "potentially risky unit operations,"[1094] none of which are included, nor were even suggested, in the Don Diego production plan. The projects that suffered delays were not only complex, but in numerous cases involved "new technology being implemented for the first time."[1095] As such, the basis for Quadrant's valuation adjustment for ramp-up time is clearly invalid.[1096]

469. Mr. Fuller highlights further reasons why WGM's and Quadrant's generic critique of mining industry ramp-up delays is inapposite in this Project—and it is precisely *because* this is a marine, not a terrestrial, resource development project. As Mr. Fuller observes, "the Don Diego project, by its very nature, as an offshore project has obviated or greatly simplified many of the studies and activities that a land-based project must complete (often at great expense and over the course of many years)."[1097] These include the following: "(a) Location selection and geotechnical studies for the process plant and associated infrastructure are not required because both are located onboard Boskalis's vessels; (b) Tailings storage facility studies and designs are not required because the tailings are deposited back to the seafloor; [and] (c) Logistics studies are simplified

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1092 Lomond & Hill ER2, ¶ 6.10.

1093 Lomond & Hill ER2, ¶ 6.9.

1094 **QE-0020**, Terry McNulty, "Minimization of Delays in Plant Startups," Society for Mining, Metallurgy, and Exploration, Inc. (2004), p. 118.

1095 **QE-0020**, Terry McNulty, "Minimization of Delays in Plant Startups," Society for Mining, Metallurgy, and Exploration, Inc. (2004), p. 116.

1096 *See* Lomond & Hill, ¶ 6.13.

1097 Lomond & Hill ER2, ¶ 5.3.

because, largely, logistics are simply part of Boskalis's standard offshore resupply operations."[1098]

470. Ultimately, Mr. Fuller's project-specific analysis regarding ramp-up time, contained in his First Expert Report,[1099] is clearly better-reasoned and more helpful than Respondent's survey of mining projects bearing no resemblance to the Don Diego Project, and, as such, should form the basis for any valuation efforts seeking to estimate commissioning time.

4. ExO Would Have Been Able to Profitably Sell the Project Output

471. In conjunction with the Memorial, Odyssey submitted an expert report from CRU Consulting ("**CRU**"), authored by Dr. Peter Heffernan. Within the phosphate, fertilizer, and feed industries, virtually any assessment of global phosphate markets, phosphate supply and demand, pricing, and outlooks relies on data collected and analyzed by CRU. It is the undisputed global leader in phosphate market analysis and pricing.[1100] Dr. Heffernan is the former head of CRU's fertilizer consulting practice (now retired) and has more than 30 years of experience in this sector. In preparing his expert report, Dr. Heffernan was supported by a team of CRU fertilizer industry consultants and analysts.[1101]

472. Dr. Heffernan evaluated the phosphate market outlook as of April 2016, the projected production from the Don Diego Project, and the characteristics of the Don Diego phosphate rock. [1102] Based on this, he found that the delivered costs of the Don Diego phosphate rock [redacted].[1103] His finding echoes the assessment of one of the

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1098 Lomond & Hill ER2, ¶ 5.3. [redacted] Lomond & Hill ER2, ¶ 5.3.

1099 Lomond & Hill ER1, ¶ 5.3.8.

1100 Heffernan ER2, pp. 1-2.

1101 Heffernan ER1, p. 1.

1102 All data, forecasts, and assessments are contemporaneous to April 2016, as published in CRU reports and publications. Heffernan ER1, p. 2.

1103 Heffernan ER1, p. 80. [redacted] Heffernan ER1, p. 80.

world's leading global investment banks, which in 2014 determined that [redacted][1104]

473. "[D]ue to the cost competitiveness of Odyssey's planned production," Dr. Heffernan concluded that "all of the phosphate rock produced for the duration of the project could have been placed in the global phosphate rock market – both to domestic consumers in Mexico, and to importers in the wider merchant traded market."[1105] As part of that analysis, Dr. Heffernan forecasted the FOB nominal price [redacted]. These forecasts were then used by Compass Lexecon in the DCF.[1106]

474. To arrive at that forecast, CRU began by calculating the "Value-in-Use" ("**VIU**") of the Don Diego phosphate rock. VIU is important to understanding phosphate market dynamics because differences in the product specifications can affect the user's production costs and/or operational productivity. Consequently, as Dr. Heffernan explains, "users are not prepared to pay all suppliers the same price per tonne of rock"; "[s]pecifications that lead to below average costs and/or increased productivity command a price premium; those that lead to above average cost and/or decrease productivity suffer a discount."[1107] CRU's VIU analysis of the Don Diego phosphate rock can be found in Section 8.4 of Dr. Heffernan's First Expert Report.

475. From there, Dr. Heffernan next studied how introducing the projected volume of the Don Diego rock would impact the phosphate market and the discounted prices that would allow ExO to displace incumbent suppliers.[1108] Those prices were derived using a short and long run marginal cost analysis.

476. In response, Mexico yet again offers the opinion of the mining consultancy WGM. Importantly, WGM did not perform an alternative market analysis. Instead, it purported

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1104 **C-0090**, Investment Bank Valuation, 29 July 2014, p. 11.
1105 Heffernan ER1, pp. 2, 80.
1106 Compass Lexecon ER1, ¶¶ 76, 102-104.
1107 Heffernan ER1, p. 87.
1108 Heffernan ER1, Section 8.4.3.

to derive its own estimates of "value and use" of the Don Diego product, (i) starting with lower Egyptian rock prices as the baseline (rather than the Moroccan benchmark, the industry standard) and (ii) making a series of arbitrary and unsupported adjustments.[1109] In his Second Expert Report, Dr. Heffernan explains why WGM's approach is fundamentally misguided.[1110]

477. First, there is no single Egyptian benchmark price for phosphate.[1111] What WGM refers to as "**the** price for Egyptian phosphate rock"[1112] are in reality Egyptian export prices for a broad basket of mixed phosphate products coming from several producers operating mines in different regions of the country.[1113] Unlike the Moroccan benchmark (Morocco K10), there is no single or overarching rock grade within that basket, and there is no consistent standard of comparison.[1114] Dr. Heffernan further explains that the wide variability of Egyptian rock, combined with the generally low level of quality specification associated with Egyptian rock exports, means they target a different segment of the market, and prices are lower.[1115] In sum, Egyptian export prices are neither suitable for the industry benchmark nor used as the industry benchmark, as WGM itself recognizes in other sections of its report.[1116]

478. Second, even if one were to use Egyptian export prices, the way WGM has constructed its VIU price analysis is misleading and results in an artificially low baseline price. Specifically, in order to arrive at the profile for Egyptian rock with an "average" grade of 28% to 30% P_2O_5 and a price, WGM averaged the specifications from two high-graded phosphate rock products from a single producer in Egypt and paired it with CRU's

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1109 WGM ER, ¶¶ 89-92.

1110 Heffernan ER2, pp. 6-11.

1111 Heffernan ER2, pp. 6-9.

1112 WGM ER, ¶ 90 (emphasis added).

1113 Heffernan ER2, pp. 7-9.

1114 Heffernan ER2, pp. 7-9.

1115 Heffernan ER2, pp. 7-9.

1116 *See, e.g.,* WGM ER, ¶¶ 81, 87 ("Morocco is generally acknowledged as setting the benchmark price for phosphate."). Further, while WGM correctly observes that phosphate rock prices are adjusted against the Moroccan benchmark, its suggestion that these adjustments are based solely on P_2O_5 content is incorrect. *See* WGM ER, ¶ 87; Heffernan ER2, p7; Agrifos ER, ¶ 38 ("Agrifos is not familiar with any case where Egyptian phosphate rock prices were used as commercial reference for a long-term contract for rock from another origin.").

projected Egyptian export price of US$ 64.00 for 2016.[1117] As explained by CRU, not only are these two high-grade rocks far from representative of the typically lower P_2O_5 content of Egyptian phosphate rock,[1118] but by matching high-grade exports for the product profile and combining it with a base price associated with predominantly lower grades for its comparison, WGM has skewed the entire comparison. Accordingly, the results of WGM's VIU analysis fail to reflect either the average P_2O_5 grade or the true average price of Egyptian rock, both of which would be significantly lower compared to Don Diego's products.

479. Third, WGM reduces the VIU of the Don Diego rock by [redacted] for moisture. It is the single largest adjustment WGM makes.[1119] WGM does not explain why it made this adjustment, let alone cite any support for doing so. The adjustment is unfounded and contrary to the evidence on the record that the Project would use [redacted], which, as explained by Mr. Bryson, reduces the moisture content to a level of [redacted][1120] CRU confirms that a moisture level of [redacted] represents the industry-accepted level for phosphate marketability and therefore does not command any adjustment to the product's VIU.[1121]

480. Fourth, WGM applies an arbitrary [redacted].[1122] In his second report, Dr. Heffernan explains why calculating the VIU and adjusting price for market entry are separate analyses.[1123] In any case, WGM failed to rebut CRU's market analysis, which determined the price levels that would be required to gain entry and retain market share by displacing higher-cost producers.[1124] In its analysis, CRU considered discounts up to

1117 WGM ER, ¶ 92, Table 3.

1118 Heffernan ER2, pp. 9-10. IFA data shows that in 2016, the average grade of P_2O_5 across *all* grades of Egyptian exports was just 27.7%, lower than WGM's "average." For comparison, one of the products WGM uses has a grade of 30.77% P_2O_5, which represents the single highest-graded rock produced in Egypt.

1119 WGM ER, ¶ 92, Table 3, line 12.

1120 **C-0087**, Boskalis, [redacted], 18 June 2014, pp. 13, 20; Bryson WS1, ¶¶ 109-110.

1121 Heffernan ER2, pp. 10-11.

1122 WGM ER, ¶ 92, Table 3, line 14.

1123 Heffernan ER2, p. 11.

1124 Heffernan ER1, pp. 94-95.

[redacted][1125] and these are the prices that Compass Lexecon uses in its DCF.

481. In an attempt to cast doubt on CRU's market analysis, WGM erroneously asserts that Don Diego phosphate rock could have only been sold in the [redacted] P_2O_5 lower market segment, [redacted]. This assertion is inaccurate and, as Dr. Heffernan observes, "demonstrates a fundamental lack of understanding of the phosphate market and the price and chemical characteristic considerations effecting rock trade."[1128] Dr. Heffernan continues:[1129]

> The full analysis in the CRU Report undertakes a more rigorous and detailed approach, recognizing that there is fungibility in the phosphate rock market that allows for substitution across grades of rock based on an acceptable range of P_2O_5 content and other chemical characteristics. Our analysis is also supported by our deep knowledge of the market and its various supply arrangements that is gleaned from our close and constant monitoring of fertilizer market developments and pricing for our clients. . . . This type of in-depth analysis is our business and has been, in one form or another, for more than 70 years.

482. As CRU demonstrated in both of its reports, the favorable chemical characteristics of the Don Diego product would have made it competitive in market segments up to the [redacted] category.[1130] This conclusion has been endorsed by Agrifos too.[1131] Once corrected for WGM's arbitrary limitation of the attainable market, [redacted].[1132]

1125 Heffernan ER2, p. 19; Heffernan ER1, 94-95.
1126 WGM ER, ¶ 99.
1127 WGM ER, ¶ 35.
1128 Heffernan ER2, p. 17.
1129 Heffernan ER2, p. 17.
1130 Heffernan ER1, p. 84; Heffernan ER2, p. 16.
1131 Agrifos ER, ¶ 36.
1132 Heffernan ER2, p. 4, 17-18.

483. Further, while Dr. Heffernan's first report noted that it was known that [redacted] [1133] Rather, Dr. Heffernan used this as an example of a supply agreement coming to its end, creating an opportunity for another supplier to gain market position.[1134] His basic conclusion was that the market presented opportunities for ExO to displace existing producers because of its favorable cost position: "with a delivered cost advantage over higher cost producers [ranging] [redacted] and in some cases . . . well above that level [Don Diego represented] an example of a disruptive technology fundamentally altering the cost structure of a mature industry."[1135]

484. [redacted].[1139]

1133 Heffernan ER1, pp. 3, 78-79.
1134 Heffernan ER2, pp. 21-22.
1135 Heffernan ER2, p. 20.
1136 WGM ER, ¶¶ 95-96.
1137 Gordon WS2, ¶¶ 4-39; see also Gordon WS1, ¶¶ 60-67.
1138 [redacted]
1139 Gordon WS2, ¶¶ 36-37.

[redacted].[1140]

485. [redacted]

486. [redacted]

487. [redacted]

1140 Gordon WS2, ¶¶ 37-38; C-0176, Los Cabos, September 2018.
1141 Gruber ER2, pp. 8-10.
1142 Gruber ER2, p. 10.
1143 Heffernan ER2, pp. 20-21; see also Heffernan ER1, pp. 2-3, 77-78.
1144 Gordon WS2, ¶¶ 33, 36-37, 39.

488. Finally, WGM's opportunistic use of the word "speculative" for the Don Diego Project in CRU's Project Gateway System ("**PGS**") should not be given any weight. CRU gave the context in its first report,[1145] and WGM chose to ignore it, arguing it was evidence of the "early exploration stage" of the Project.[1146] This interpretation is inaccurate as CRU reiterates in its second report;[1147] the use of the term "speculative" in CRU's PGS categorizations means only that there is insufficient information to judge the likelihood of the Project going forward. CRU explains that a phosphate rock project classified as 'speculative' is not a reference to its likelihood of successfully commencing operation or a reflection of the ultimate competitiveness of the project, but rather an observation that the project in question has yet to pass through the specific 'gates' in the PGS system,[1148] or that there is insufficient public information available about the project to allow CRU to assess its progress.[1149] This was the case for the Don Diego Project in 2016. The lack of publicly available information at the time on the progress of the Project, coupled with the lack of an environmental permit, led CRU to categorize the Project as "speculative" in its PGS system.[1150]

D. Claimant's Discount Rate Is Appropriate

489. To properly account for both time value for money and business risks, Compass Lexecon applied a discount rate of 13.95% to the Project's Phase I cash flows. As explained in the first Compass Report,[1151] the discount rate is comprised of (i) a risk-free rate of 2.12% (to reflect the time value of money); (ii) an industry risk rate of 5.85% (to reflect risks affecting the metals and mining industry); (iii) a country risk premium of 2.48% (to reflect that the investments were in Mexico); and (iv) a pre-operational risk rate of 3.5% (to reflect the inherent risks of a project that is not yet operational). For the Project's Phase II cash

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1145 Heffernan ER1, Section 3.1.

1146 WGM ER, ¶¶ 113-114.

1147 Heffernan ER2, pp. 23-24.

1148 CRU explains that the position of a project within the PGS remains fluid and can be upgraded or downgraded as the project unfolds, progressing as more information becomes available or regressing following, for instance, construction issues or financing hurdles: Heffernan ER2, p. 22.

1149 Heffernan ER2, pp. 23-24.

1150 Heffernan ER2, pp. 23-24.

1151 Compass Lexecon ER1, ¶¶ 87-91.

flows, [redacted] [1152]

490. Mexico and its expert Quadrant argue the discount rate should be 26%.[1153] To get there, Quadrant argues that the adjustment for pre-operational risk should be 13.3% [redacted],[1154] there should be a 1% premium for "technology risk,"[1155] and the discount rate should include a 3.6% "illiquidity premium" based on its view that the Project is a privately held, illiquid asset.[1156] These adjustments are unfounded and should be rejected.

491. First, Quadrant's pre-operational risk and technology premiums rest on the erroneous premise that the Project was at the exploration stage and would use novel technology. Neither assertion is true. As already extensively discussed, on the Valuation Date, the Project had reached a PFS stage. Further, the Project would have employed proven and well-established technology and had cleared all regulatory hurdles (but-for the unlawful denial of the MIA).[1157] Thus, as a factual matter, these risk premiums are unsupported.

492. Second, the study from which Quadrant derives its pre-operational risk adjustment is a seven-page article authored by a-then PhD student.[1158] As Compass Lexecon discusses in its Second Report,[1159] the author's aim appears to be providing an overview of the discount rate methodology. The premiums that Quadrant cites appear to be taken from "class notes on a (now deleted) website published by [another person], who seems to have been a teaching assistant at the University of California-Berkeley Haas School of

1152 Compass Lexecon ER1, ¶ 115(b).
1153 Quadrant ER, ¶ 151.
1154 Quadrant ER, ¶ 162.
1155 Quadrant ER, ¶ 159.
1156 Quadrant ER, ¶¶ 153-155.
1157 Compass Lexecon ER2, ¶¶ 91-92.
1158 Quadrant ER, ¶ 161; **QE-50**, Mohsen Taheri, Mehdi Irannajad, and Majid Ataee-Pour, "Risk-adjusted discount rate estimation for evaluating mining projects," The FINSIA Journal of Applied Finance, Issue 4, 2009, p. 40.
1159 Compass Lexcon ER2, ¶¶ 93-97.

Business at the time."[1160] Thus, there is "no indication that these figures are related to the mining industry, or to any industry for that matter, and hence they do not have the necessary scientific or practical foundation to be relied upon for cost of capital computation."[1161]

493. Leaving aside these basic issues with the origins and reliability of the premiums used in the article, Quadrant compounds the error through double counting. Specifically, Quadrant adds the pre-operational risks for an early exploration project (which, discussed above is the wrong project stage) and the risks for "adding a new project to an existing complex" (which the article does not explain, and on its face, would not apply to the Project).[1162]

494. Third, Quadrant's allegation that the discount rate should include an "illiquidity premium" due to the supposed difficulty of selling a privately-held asset[1163] is not supported by standard valuation guidelines and runs counter to one of the basic principles of FMV, namely that neither party is assumed to be under any compulsion (or time constraint) to engage in the transaction.[1164] It is also inapplicable on its face to the Project since "potential buyers for the Don Diego Project would be able to acquire ownership through OMEX shares, which would not demand an illiquidity discount".[1165]

495. Moreover, Quadrant's "illiquidity premium" lacks any supporting evidence as it is actually based on a "size premium" market analysis of US stock companies. This is wrong in at least two ways. First, as explained by Compass Lexecon, the use of a size premium as a proxy for an illiquidity premium has been criticized in the economic literature for being unreliable.[1166] Second, Quadrant also double-counts risks, insofar as the difference

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1160 Compass Lexcon ER2, ¶ 94.

1161 Compass Lexcon ER2, ¶ 94.

1162 Quadrant ER, ¶ 161; **QE-50**, Mohsen Taheri, Mehdi Irannajad, and Majid Ataee-Pour, "Risk-adjusted discount rate estimation for evaluating mining projects," The FINSIA Journal of Applied Finance, Issue 4, 2009, p 41. See also Compass Lexcon ER2, ¶ 95.

1163 Quadrant ER, ¶¶ 153-155.

1164 Compass Lexecon ER2, ¶¶ 98-99.

1165 Compass Lexecon ER2, ¶ 100.

1166 Compass Lexecon ER2, ¶ 101.

between the market "size" conditions in Mexico vis-à-vis the United States are already reflected in the country risk rate of 2.48% calculated by Compass Lexecon.[1167]

496. Finally, Claimant takes note that Mexico elected not to object to the other inputs of Compass Lexecon's discount rate on the ground that "the effect of [the] other points of disagreement [would be] relatively minor."[1168] Having declined to refute these points in the Counter-Memorial, Mexico should be foreclosed from challenging them in its Rejoinder.

E. Claimant's Real Options Valuation Is Appropriate for Phase II of the Don Diego Project

497. For its valuation of Phase II of the Don Diego Project, Compass Lexecon relied on a Real Options Valuation ("ROV") approach. A real option is defined as the right, but not the obligation, to make a business decision. Here, the real option refers to Odyssey's economically valuable right to further develop the Don Diego concession during Phase II of the Project, assuming that the market conditions and the results of further exploration would have been sufficiently favorable.

498. To calculate the ROV, Compass Lexecon first valued the NPV of Phase II as of the Valuation Date (i.e. the date on which a willing buyer would have acquired the Don Diego Project together with the option to develop Phase II). Compass Lexecon then determined that the option term would be [redacted].[1169] Lastly, Compass Lexecon calculated the price volatility, that is the expected fluctuation of Project value, based on the stock price fluctuation of comparable, public listed mining companies (the "Peer Group").[1170]

499. Mexico and Quadrant object to the use of a ROV approach on the basis that (i) it would always result in a positive valuation, as opposed to a DCF analysis which could result in a

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1167 Compass Lexecon ER2, ¶ 100-102.

1168 Quadrant ER, ¶ 152.

1169 [redacted] pp. 19-20 and Selby ER1, ¶¶ 79-85.

1170 Compass Lexecon ER1, ¶¶ 115(d), 162(c), fn. 158.

negative NPV; (ii) it would be technically difficult to implement; and (iii) it would be based on an incorrect volatility parameter.[1171] Compass Lexecon explain in its Second Report why each of these objections is meritless.[1172]

500. In brief, Quadrant's objection that the ROV approach would always lead to positive valuations, as opposed to a DCF analysis, misses the point. The purpose of a ROV analysis (as Quadrant is perfectly aware)[1173] is to value the opportunity of a business decision, rather than the NPV of a project. As mentioned, a real option gives the investor the right, but not the obligation, to invest in a project. Thus, by definition, the option value can only be zero (no value in exercising the option) or positive. A traditional DCF analysis evaluating a project – regardless of whether the project has a positive or negative NPV - does not take into account the value of flexibility that comes with a real option: the opportunity to undertake a business initiative only after uncertainty unfolds and without having to commit to major financial outlays from the outset.

501. In fact, a willing buyer of the Don Diego Project in April 2016 would have had the right (rather than the obligation) to decide whether to pursue Phase II of the Project [redacted]. In the nearly [redacted] between the Date of Valuation and the date in which the willing buyer decides whether to exercise the option, it would be guided in its decision by (among others) the continued analysis of Phase I, the related market developments and the results of the continued exploration and development of the Don Diego concession. As explained by Compass Lexecon, "[t]his flexibility is what the ROV framework captures. By delaying the investment decision . . . the expected value of the asset increases, given that, standing as of the Date of Valuation, the probability of making a bad investment is lower than if the investment were to be committed as of that date. This implies that the longer the time to confirm the investment, the higher the optionality

1171 Quadrant ER, ¶¶ 165-179. As to Mexico's reiterated objection that income valuation techniques would be allegedly inappropriate in this case, this has been already addressed above.

1172 Compass Lexecon ER2, ¶¶ 60-74.

1173 Quadrant agrees that by adopting a ROV approach, "Compass Lexecon is not valuing the Project's Phase II, but rather the option to develop the Project's Phase II." (Quadrant ER, ¶ 169.)

value."[1174] Therefore, as also recognized by Quadrant,[1175] there is real value in integrating a traditional DCF analysis with a ROV since while the DCF method captures a base estimate of value, the option valuation adds the impact of the positive potential uncertainty that would not otherwise be captured and quantified.

502. Second, Quadrant relies on an article by Prof. Damodaran to argue that a supposed challenge to the use of ROV would be the fact that "real options on physical assets" are not traded on the stock market unlike financial options.[1176] This argument is based on a fundamental misunderstanding of the different nature of financial options and real options. "Financial options" typically refer to derivative financial instruments, such as call and put options contracts, which are traded on the stock market. In contrast, a "real option" refers to a corporate decision involving a tangible asset, such as deferring, expanding or abandoning a company's project. The company's right to undertake a certain business opportunity does not constitute, by definition, an exchangeable security.

503. Accordingly, Compass Lexecon observes that far from being a supposed shortcoming, the fact that real options involve "real" underlying assets is a unifying characteristic of all real options which has not affected the suitability of ROV to value potential "real" investments. Indeed, the article of Prof. Damodaran relied upon by Quadrant actually confirms that real options are "ubiquitous," "have significant value" and are routinely valued with ROV, provided that the correct methodology is applied.[1177]

504. As detailed in the first Compass Report,[1178] Compass Lexecon followed the same methodology suggested by Prof. Damodaran[1179] which stands unrebutted given that

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1174 Compass Lexecon ER1, ¶ 57 (emphasis added).

1175 "But different from DCF, which is a static valuation methodology, ROV considers the value of options embedded in managerial choices." Quadrant ER, ¶ 166.

1176 Quadrant ER, ¶ 167; **QE52**, Aswatch Damodaran, "The Promise and Peril of Real Options," NYU Working Paper No. S-DRP-05-02, July 2005, pp. 21.22.

1177 Compass Lexecon ER2, ¶¶ 62-63; *see also* **QE-52**, Aswatch Damodaran, "The Promise and Peril of Real Options," NYU Working Paper No. S-DRP-05-02, July 2005, p. 4.

1178 Compass Lexecon ER1, ¶¶ 156-163.

1179 Including by reference to the timing of the implementation of the real option, another issue where Quadrant ignored Compass Lexecon's previous analysis (Quadrant ER, ¶ 167): see Compass Lexecon ER1, ¶¶ 101, 115 and Compass Lexecon ER2, ¶¶ 64-65.

Quadrant neglected to challenge any of the ROV's inputs with the exception of the volatility parameter discussed here below.

505. Finally, Quadrant criticizes Compass Lexecon's calculation of the volatility (i.e. the measure of how the present value of the project and the investment cost are expected to fluctuate over time), alleging that (i) the source of the volatility should be the volatility of the underlying commodity, rather than the volatility of the mining companies of the Peer Group, and that (ii) such companies would not be comparable to Odyssey because they own mining projects in different geographical areas or are not active in phosphate mining. This criticism is unjustified.

506. Using comparable companies is one of the approaches suggested by Prof. Damodaran.[1180] Since "real" projects are not traded assets, volatility cannot be computed based on market prices, but needs to be estimated. This is typically done by computing the volatility of market prices for comparable, publicly listed firms. As Compass Lexecon explains, relying only on commodity prices as suggested by Quadrant would lead to an underestimation of the Project's risks since it would fail to capture typical operational mining risks, such as geological risk or environmental risk.[1181] To properly account for all of the Project's risks, Compass Lexecon selected 352 junior mining companies active in the same industry sector as OMEX and which were comparable in size to the Don Diego Project.[1182] Therefore, the Peer Group companies share, on average, the same risk characteristics of Don Diego, which remain unaffected by the geographical location (commodities market are global) or the mining sub-sector in which they operate (typical operational mining risks are common across the industry regardless of the underlying commodity).

507. In conclusion, Quadrant has not only failed to suggest an alternative ROV valuation or to engage with Claimant's expert on the inputs used in the analysis, but its theoretical

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1180 Compass Lexecon ER2, ¶ 71; *see also* **QE-52**, Aswatch Damodaran, "The Promise and Peril of Real Options," NYU Working Paper No. S-DRP-05-02, July 2005, pp. 28-29.

1181 Compass Lexecon ER2, ¶¶ 71-73.

1182 Compass Lexecon ER1, ¶ 162 and fn. 158.

objections to the use of ROV also reflect a fundamental lack of understanding of the ROV framework or a deliberate misinterpretation of Compass Lexecon's analysis.

F. Odyssey's Market Capitalization Supports the Reasonableness of the DCF Valuation

508. In it is initial report, Compass Lexecon considered Odyssey's market capitalization, both from the perspective of a possible valuation methodology and as a reasonableness check on its DCF valuation.[1183] It concluded that, when a number of key factors were taken into account, Odyssey's market capitalization provided a reconciliation with the DCF, but standing alone was not a reliable basis upon which to determine the FMV of the Don Diego Project in the "but for" world where the MIA was approved.[1184]

509. Specifically, Compass Lexecon explained that Odyssey's stock price was depressed by the continuing negative impact of its legacy shipwreck salvage business, the financial distress it engendered, and the noise created by a series of short-selling attacks.[1185] Thus, Compass Lexecon determined that, as of the Date of Valuation, Odyssey's market capitalization did not fairly reflect the value of Odyssey's equity interest in the Don Diego Project on a non-controlling, pre-permit basis.[1186]

510. Turning to reconciliation, Compass Lexecon noted that any comparison of Odyssey's market capitalization to Compass Lexecon's DCF must be adjusted to reflect (i) the impact of the MIA being granted (which Compass Lexecon terms a "permit bump") and (ii) an acquisition (or control) premium because the market valuation represents transactions of individual shares that give control over Odyssey.[1187] After these adjustments were made, Compass Lexecon found that, as of the Date of Valuation, Odyssey was trading at a [redacted], consistent with what one would expect for a company in financial distress and subject to short-selling attacks.[1188]

1183 Compass Lexecon ER1, ¶¶ 118-122.
1184 Compass Lexecon ER1, ¶¶ 118-119.
1185 Compass Lexecon ER1, ¶¶ 118-119; Compass Lexecon ER2, ¶¶ 104-105.
1186 Compass Lexecon ER1, ¶ 119; Compass Lexcon ER2, ¶¶ 104-105, 107-110, 120.
1187 Compass Lexecon ER1, ¶ 121.
1188 Compass Lexecon ER1, ¶ 122 and Table 8.

511. Quadrant's primary response is that Compass Lexecon used the wrong market capitalization in its analysis.[1189] It argues that instead of Odyssey's share price and market capitalization as of **7 April 2016** (the Date of Valuation), as used by Compass Lexecon,[1190] the starting point for any assessment should be Odyssey's market capitalization as of **29 February 2016.**[1191] The difference between the two dates is significant:

- On the Date of Valuation, Odyssey's market capitalization was US$ 65 million, corresponding to a share price of US$ 8.68.[1192]
- On 29 February 2016, Odyssey's market capitalization was US$ 19.1 million, corresponding to a share price of US$ 2.55.[1193]

512. To justify its approach, Quadrant theorizes that in March and early April 2016, Odyssey's share price was inflated by a temporary event that bore no relation to the Don Diego Project.[1194] The event it identifies is a nine-part television series that ran on the History Channel.[1195] Based solely on this limited-run series airing on a specialty cable channel, Quadrant spins a narrative that strays so far from reality—and is so clearly outcome driven—that it not only discredits Quadrant's argument on market capitalization, but it also calls into question the rigor of its analysis overall, if not its independence as an expert.

513. This and Quadrant's other arguments regarding market capitalization are addressed below and in greater detail in Compass Lexcon's Second Expert Report.[1196]

1. Odyssey's Share Price Rose in March 2016 Because Investors Anticipated That a Favorable Decision on the MIA Was Imminent; It Fell on 11 April 2016 Because the MIA Was Denied

514. From 8 February to 4 April 2016, the History Channel aired a nine-part series called the "Billion Dollar Wreck." The show followed a notorious treasure hunter's search to recover gold coins reputedly carried on the *RMS Republic*, which sank 50 miles off the coast of

1189 Quadrant ER, ¶ 64.
1190 Compass Lexecon ER1, ¶ 120.
1191 Quadrant ER, ¶ 64.
1192 Compass Lexecon ER2, ¶ 126.
1193 Compass Lexecon ER2, ¶ 126.
1194 Quadrant ER, ¶¶ 63-64.
1195 Quadrant ER, ¶ 59.
1196 Compass Lexecon ER2, ¶¶ 126-143.

Nantucket, Massachusetts in 1909.[1197] The series is not about Odyssey, and Odyssey is not featured in any of the episodes.[1198] Yet, according to Quadrant, this series generated so much excitement about shipwreck exploration and salvage that it caused investors to flock to the market and buy Odyssey stock.[1199] Indeed, Quadrant even goes so far (out on its chosen ledge) as to opine that the broadcasting of the "Billion Dollar Wreck" "appears to be **the only plausible explanation**" for the increase of Odyssey's share price in the run up to the First Denial.[1200]

515. The only evidence Quadrant offers for this conclusion are three isolated comments from TV viewers that contained a passing reference to Odyssey.

a. The first comment to which Quadrant refers is a post on the website ScubaBoard.[1201] ScubaBoard is a website for diving enthusiasts, with forums devoted to topics like underwater photography, diving equipment, diving clubs, and the diving industry. The comment upon which Quadrant relies was posted in the "Diving TV & Movies" sub-forum.[1202] It draws on a single sentence in a five-paragraph post that begins, "I finally watched the show and I was disappointed. The first thing about was this Marty guy who scammed investors out of million for a wreck that many think doesn't hold any value. He destroys his marriage, attempts or succeeds in shooting his friend along with harassing and bribing him. Then has the [nerve] to scam people again with this show."[1203]

b. The second comes from a comment on an article that ran in the online version of the *Vineyard Gazette*, a local newspaper for Martha's Vineyard, an island off the

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1197 **QE-21**, History Channel website, "Billion Dollar Wreck."

1198 Gordon WS2, ¶ 40.

1199 Quadrant ER, ¶¶ 59-60.

1200 Quadrant ER, ¶ 59 (emphasis added).

1201 Quadrant ER, ¶ 56; **QE-23**, ScubaBoard website, "Billion Dollar Wreck," 16 February 2016, p. 3.

1202 **QE-23**, ScubaBoard website, "Billion Dollar Wreck," 16 February 2016, p. 3 of PDF; **C-0400**, ScubaBoard website, "Billion Dollar Wreck," 16 February 2016.

1203 **QE-23**, ScubaBoard website, "Billion Dollar Wreck," 16 February 2016, p. 3 of PDF. The paragraph mentioning Odyssey reads as follows: "Third, the wreck seems to be in worse shape than the depth charged and torpedoed Lusitania. The drivers descend down to the wreck with nothing but a basked and a ROV. What work is going to be done on a wreck that is so badly collapsed that there is only 18 inches of space between decks and the supposed gold in near the bottom deck? I would be taking torches and explosives down to blow that thing wide open and them [sic] sending divers down to move debris out of the way or a clam bucket dredge to break through the decks like Odyssey." (*Id.*)

coast of Massachusetts near Nantucket.[1204] There were 30 comments in total, many of which were trading views on the quality of the series.[1205]

c. The third and last comment was on a post from the website "Talk Nerdy with Us."[1206] "Talk Nerdy with Us" describes itself as an online magazine covering TV shows, movies, music, books, gaming, and pop culture.[1207] Again, there was only a single mention of Odyssey, and the bulk of the comments about the show were negative.[1208]

516. As is evident from the above, none of these comments were made on reputable, or even known, stock market analysis sites or in a forum where users were discussing trading strategies, such as Seeking Alpha or WallStreetBets.

517. In contrast, investment analyst coverage and investor boards all point to the real reason Odyssey's share price rose in March 2016—the market's expectation that SEMARNAT's decision was imminent and would be positive. Notably, Quadrant ignores all of this coverage in its discussion of Odyssey's market capitalization. Moreover, its assertion that "there were no new announcements in March relating to the Project, so it follows that the increase in the share price of Odyssey observed in March 2016 cannot be attributed to the Project,"[1209] is factually wrong.

1204 Quadrant ER, ¶ 57; **QE-22**, Heather Hamacek, "Diving Deep for RMS Republic's Treasure Is Riveting Tale," Vineyard Gazette, 17 March 2016, p. 3. ("My comment would be for the amount of money that it is costing for the hunt why not bring in a deep sea proven salvage company such as odyssey marine who have a proven track record of being able to into hard to reach places etc. I get the "I have done my research" and want to find it myself but if the gold is there at 1.6 billion there is more than enough $ to go around.").

1205 **C-0404**, Heather Hamacek, "Diving Deep for RMS Republic's Treasure Is Riveting Tale," Vineyard Gazette, 17 March 2016.

1206 Quadrant ER, ¶ 58; **QE-24**, Tracy Miller, "History Airs Sunken Ship Gold Quest, 'Billion Dollar Wreck' of RMS Republic," Talk Nerdy with Us, 1 February 2016, p. 10 of PDF. ("I watched the last show of the season last night and was very disappointed that they did not even find a hint of gold or even get into the first class passengers cabin to find anything. . . . At the present rate it will take 10 years to even get near the gold. Martin Bayerle did not learn much from his salvage effort in the late 80's. . . . The Bayerele's need to contact a company like Odyssey Marine Exploration that has experience with different types of salvage and give them a share for their efforts. . . . Time is money in this type of salvage effort and they need to get expert help or the ship will have crumbled to pieces in the meantime trying to salvage it their way.").

1207 **C-0366**, Talk Nerdy with Us LinkedIn description.

1208 **QE-24**, Tracy Miller, "History Airs Sunken Ship Gold Quest, 'Billion Dollar Wreck' of RMS Republic," Talk Nerdy with Us, 1 February 2016, p. 9 of PDF ("Well, I think you've collectively arrived at the reality of this reality show . . . it's all a bunch of baloney!" 2 March 2016.

1209 Quadrant ER, ¶ 52.

518. First, during a conference call with market analysts on 16 December 2015, CEO Mark Gordon explained that the statutory timing for SEMARNAT's decision on the MIA "likely put[s] their decision into the first quarter of 2016,"[1210] later noting it "puts you probably sometime into March [2016]."[1211] Thus, the market was primed to expect a decision on the MIA towards the end of the first quarter 2016.

519. Second, on 22 March 2016, Odyssey announced that it had concluded an agreement with Epsilon Acquisitions LLC ("**Epsilon**"), under which it received a US$ 3 million convertible loan.[1212] The press release further noted that "Epsilon is an investment vehicle controlled by Mr. Alonso Ancira. Mr. Ancira is also the executive chairman of Altos Hornos de Mexico S.A.B. de C.V. which is the owner of MINOSA."[1213]

520. The market buzz from this announcement was immediate.

a. Later that day, an article was posted on Seeking Alpha heralding the Epsilon loan as a positive development for Odyssey.[1214] The loan was viewed as a sign of confidence that "Ancira and MINOSA still believe that environmental approval is coming."[1215]

b. Describing Odyssey as "a very binary stock that needs environmental approval," the article concluded, "we continue to believe that approval is coming, and that upon approval OMEX stock presents an opportunity to make a multiple of your investment in a short period of time."[1216]

1210 **QE-25,** Odyssey Marine Exploration Inc., Operational Update Conference Call Transcript, 16 December 2015, p. 5 ("We will continue to focus on developing the Don Diego deposit. We were informed last week by Exploraciones Oceanicas that SEMARNAT, the Mexican environmental agency, has requested an extension to provide sufficient time to review the additional information provided this month. This extension will likely put their decision into the first quarter of 2016."). Quadrant discusses this exhibit in a different context but does not address the timing implications of SEMARNAT's decision on Odyssey's stock price.

1211 **QE-25,** Odyssey Marine Exploration Inc., Operational Update Conference Call Transcript, 16 December 2015, p. 15 ("So I guess sometime last week, they [SEMARNAT] announced that they would be requesting the supplemental period of 60 business days, and that 60 business day count starts on December 18th, which puts you probably sometime into March.").

1212 **C-0407**, Odyssey Press Release: "Odyssey Marine Exploration Executes Funding Transaction," 22 March 2016.

1213 **C-0407**, Odyssey Press Release: "Odyssey Marine Exploration Executes Funding Transaction," 22 March 2016.

1214 **C-0406,** "Odyssey Marine: Positive Development with New Funding," Seeking Alpha, 22 March 2016.]

1215 **C-0406,** "Odyssey Marine: Positive Development with New Funding," Seeking Alpha, 22 March 2016, p. 1.

1216 **C-0406,** "Odyssey Marine: Positive Development with New Funding," Seeking Alpha, 22 March 2016, p. 2.

c. Several of the reader comments found after the end of the article focused on the timing of SEMARNAT's decision. One noted, "[m]anagement had said by the end of 1Q, but because this week is a holiday in Mexico my guess is that it comes in the 1st week of April."[1217]

521. Finally, on 30 March 2016, Odyssey issued a press release reporting its 2015 results.[1218] The press release also discussed the MIA application process and informed readers that "[a] decision on this application is expected in the near future."[1219]

a. That same day, research analysts from Craig-Hallum Capital Group LLC released a report with a buy rating and a US$ 30.00 price target, noting, "[w]e continue to think shares of OMEX are substantially undervalued."[1220] In explaining the rating, the report states:[1221]

> SEMARNAT Decision Imminent -- While it's difficult to predict the exact date that SEMERNAT needs to render a decision due to the government's ability to add days to the window due to special holidays, we expect news within the next few weeks. All recent signs are pointing to a positive outcome.

b. Among the signs Craig-Hallum identified were (i) PEMEX's then-recent acquisition of Fertinal[1222] and (ii) Epsilon's US$ 3 million convertible loan to Odyssey.[1223]

c. The following day OMEX's stock started a three-day rally leading to the stock's highest value in 2016.[1224]

1217 **C-0406,** "Odyssey Marine: Positive Development with New Funding," Seeking Alpha, 22 March 2016, p. 10.

1218 **C-0409**, Odyssey Press Release: "Odyssey Marine Exploration Reports Fourth Quarter and Full Year 2015 Results," 30 March 2016.

1219 **C-0409**, Odyssey Press Release: "Odyssey Marine Exploration Reports Fourth Quarter and Full Year 2015 Results," 30 March 2016, p. 1.

1220 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 2. As noted in the Memorial (Claimant's Memorial, ¶ 192), Odyssey trades under the ticker symbol "OMEX."

1221 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 1.

1222 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 1. ("One such sign is Pemex's recent $625 million investment in Groupo Fertinal. Fertinal, a nearly insolvent phosphate-related fertilizer producer, is not viable without a steady and economical source of phosphate. Oceanica's Don Diego project is the only such source.").

1223 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 1. ("Also pointing in the right direction is Alonso Ancira's recent $3 million personal convertible loan to the company last week. Ancira is the Mexican billionaire behind MINOSA, the significant investor in Odyssey and as well connected person as you can find in the industry. A negative SEMERNAT decision would probably render the loan a total loss so Ancira must be very confident Oceanica's changes in gaining the environmental permit.")

1224 Compass Lexecon ER2, ¶ 134(e).

522. Quadrant's position that the share price increased because investors saw a show on the History Channel and believed "they stood to partake in profits generated by shipwreck rescue operations"[1225] is not only just unsupported; it is pure fantasy.

523. Even more incredulously, Quadrant also contends that the reason Odyssey's share price dropped on 11 April 2016 is because the series ended—not because SEMARNAT denied the MIA and prevented Odyssey's flagship project from moving forward.[1226] While allowing that the Denial of the MIA "coincided" with the collapse in Odyssey's stock prices, Quadrant argues that:[1227]

> [O]ne cannot simply take the decrease in market capitalization observed in early April 2016 and attribute it to the Project if, as explained above, the decrease started off from an abnormally high level in March 2016 that came to be for reasons unrelated to the Project.

524. In other words, having advanced the false narrative that a little-seen TV show that was not even about Odyssey somehow created market buzz and inspired investors to buy its stock, Quadrant then tries to bootstrap that narrative to deny the obvious. Indeed, Quadrant goes so far as to opine:[1228]

> **[I]t is doubtful that the decline in Odyssey's market capitalization** observed in the days immediately following Claimant's Valuation Date **can be attributed to the denial of the environmental permit. More likely**, it is explained by bearish sentiment among investors after the end of the "Billion Dollar Wreck."

525. Odyssey announced that SEMARNAT had denied the MIA on 11 April 2016.[1229] It was the single-largest trading day in the company's history.[1230] By market close, the share price

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1225 Quadrant ER, ¶ 60.

1226 Quadrant ER, ¶ 60.

1227 Quadrant ER, ¶ 60.

1228 Quadrant ER, ¶ 62 (emphasis added).

1229 **C-0410,** Odyssey Press Release: "Odyssey Marine Exploration Responds to Decision on 'Don Diego' Project," 11 April 2016. SEMARNAT did not publicly report the Denial until the following Thursday. **C-0362,** Gaceta Ecologica, 14 April 2016, p. 3. (The *Gaceta Ecologica* is a weekly publication wherein SEMARNAT publishes information about MIA submissions, authorizations and denials.)

1230 Gordon WS2, ¶ 43. The second largest occurred on 22 March 2018, when Odyssey announced the TFJA had vacated the First Denial.

had plummeted from US$ 8.68 to US$ 3.45. Laid bare, Quadrant's argument asks this Tribunal to believe that these events are attributable to the end of a tangentially-related History Channel series a week earlier. Once again, Quadrant not only fails to offer any meaningful evidence to support its supposition, it turns a blind eye to the mountain of evidence that entirely disproves it.

a. For instance, an article published on *Seeking Alpha* after Odyssey communicated the MIA Denial described it as a "devasting blow for the stock, down 60% on the news."[1231]

b. News of the Denial was picked up by various news outlets, who attributed the drop in Odyssey's stock price to the Denial of the MIA.[1232]

c. On 13 April 2016, Craig-Hallum downgraded Odyssey from a "Buy" rating with a price target of US$ 30.00 a share to a "Hold" rating with a price target of US$ 3.50.[1233] The headline of the analyst report leaves no doubt as to the reason: "Environmental Approval for Don Diego Project Denied, But Appeal is Likely. Downgrading to HOLD Rating and Lowering Price Target to $3.50."[1234]

526. Not a single news outlet or analyst suggested that the drop in Odyssey's share price had anything to do with a television show, including "Billion Dollar Wreck." That Quadrant would advance such a palpably false argument necessarily calls into question the rest of its analysis and conclusions.

527. Relatedly, Quadrant's claim that Odyssey's market capitalization also reflects ongoing marine operations, shipwreck activities, and other mineral projects is overstated.[1235] On 16 December 2015, Odyssey announced that it had sold a majority stake in its shipwreck

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1231 **C-0411,** "Odyssey Marine: Disappointing Delay, But All Is Not Lost," Seeking Alpha, 11 April 2016, p.1.

1232 *See, e.g.,* **C-0413,** "Odyssey's Stock Sinks After Plan Is Rejected," Tampa Bay Times, 12 April 2016, p.1 ("Tampa treasure hunter Odyssey Marine Exploration's stock plummeted nearly 60% Monday after it disclosed the Mexican government denied the company's application to mine a large deposit of phosphate – a key component of fertilizer – in Mexican waters."); **C-0465**, "BUZZ-Odyssey Marine Exploration: Halves as Mexico license denied," Reuters News, 11 April 2016; **C-0412,** "Why Are These 4 Stocks So Volatile Today?," Accesswire, 11 April 2016.

1233 **C-0414,** Craig-Hallum Capital Group LLC Analyst Report, 13 April 2016, p. 1.

1234 **C-0414,** Craig-Hallum Capital Group LLC Analyst Report, 13 April 2016, p. 1. [The price target of US$ 3.50 incorporated a 10% chance that the MIA would be approved going forward, which the analyst deemed to be "conservative."]

1235 Quadrant ER, ¶¶ 69-70. To the extent Quadrant relies on Odyssey's full-year 2016 operating results, which were released in early 2017, this information would not have been available to investors considering whether to buy or sell Odyssey shares in April 2016 . (*See* Quadrant ER, ¶¶ 68-69.)

recovery business.[1236] During the subsequent conference call with analysts, Mr. Gordon, Odyssey's CEO, stated: "Management believes that Odyssey's most valuable assets for the future are its stake in the Don Diego deposit and Odyssey's marine exploration capabilities."[1237] Odyssey also made clear that it believed any remaining upside associated with the shipwreck recovery business would be limited.[1238]

528. Analyst coverage demonstrates that investors understood the move to be a positive "shift in strategic direction" that would mitigate the risk associated with the shipwreck recovery business, "while positioning the company for the potentially transformational (albeit binary) decision regarding environmental approval" of the Don Diego Project.[1239]

529. An article published on *Seeking Alpha* following the announcement further noted that "the shipwreck business was never a good fit for a public company due to the lumpy recognition of revenue and monetization of recoveries," and that "[s]elling this portion of the business takes away a significant amount of risk and allows the company to focus on the much more lucrative mineral deposit side of the business."[1240]

530. Finally, the analyst reports make clear that as of the Date of Valuation, Odyssey's market capitalization was being driven by the Don Diego Project. For instance, on 30 March 2016, Craig-Hallum published an institutional research report stating that Odyssey had "transitioned its company from focusing on shipwreck recovery to exploration and development of offshore mining opportunities."[1241] The report further described the Don Diego Project as Odyssey's first target and stated that "a negative decision on the project

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1236 **C-0393**, "Press Release: Odyssey Marine Exploration Executes $21 Million Deal, Retires all Bank Debt, and Retains a Financial Interest in Future Shipwreck Projects," 16 December 2015. Odyssey retained a 21.25% interest in future shipwreck projects and a service contract to perform the recovery work. **C-0393**, "Press Release: Odyssey Marine Exploration Executes $21 Million Deal, Retires all Bank Debt, and Retains a Financial Interest in Future Shipwreck Projects," 16 December 2015, p. 1.

1237 **QE-25**, Odyssey Marine Exploration Inc - Operational Update Conference Call Transcript, 16 December 2015, p. 6.

1238 **QE-17**, Odyssey SEC 10-K filing, 31 December 2015, p. 7 ("Starting on December 10, 2015, future work by us on shipwreck projects will be done as a contractor to another party. This will limit the upside for us on such projects.").

1239 **C-0392,** Craig-Hallum Capital Group LLC Analyst Report, 16 December 2015, p. 1.

1240 **C-0394**, "Odyssey Marine: Several Positive Developments Including Retirement of all Bank Debt," Seeking Alpha, 17 December 2015, p.2.

1241 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 1.

from Mexican officials would render the project (as well as Odyssey's stock) worthless."[1242]

2. Claimant's Acquisition Premium Is Appropriate

531. To conduct a reasonability check on its DCF value, Compass Lexecon compared this figure to the value of OMEX's market capitalization with several adjustments made to capture the company's full value. One such adjustment was made to account for the acquisition (or control) premium that a hypothetical buyer would have had to pay in addition to the shares' fair market value to gain control over Odyssey and the Don Diego Project.

532. Quadrant incorrectly argues that a control premium is unwarranted in the present case because (i) it generally reflects "other short term motives of the purchaser rather than just the underlying fundamentals of the target company";[1243] and (ii) it is the product of selection bias because typical target companies are in financial distress or are otherwise "poorly managed,"[1244] while further arguing that Compass Lexecon should have included "negative premiums" in its analysis.[1245] As discussed below, Quadrant's arguments are meritless and defy financial logic.

533. First, financial economics literature (including that relied upon by Quadrant)[1246] confirms that a controlling interest has greater value than a minority interest because of the purchaser's ability to effect changes in the overall business structure and to influence business policies.[1247] As Compass Lexecon explains, this fact remains true regardless of what the buyer's short-term motives are, and regardless of whether the acquirer actually manages to enhance the value of the target company.[1248] Controlling shareholders have the power to determine the direction of the company, including by selecting the

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1242 **C-0408**, Craig-Hallum Capital Group LLC Analyst Report, 30 March 2016, p. 1.

1243 Quadrant ER, ¶ 77.

1244 Quadrant ER, ¶ 76.

1245 Quadrant ER, ¶¶ 73-75. *See also* Respondent's Counter-Memorial, ¶ 703.

1246 Compass Lexecon ER2, ¶ 116; **QE-27**, Philip Saunders, "Control Premiums, Minority Discounts, and Marketability Discounts".

1247 Compass Lexecon ER2, ¶ 111.

1248 Compass Lexecon ER2, ¶ 112-113.

management, making capital distributions, or liquidating the entity. As such, the simple "fact of control" has intrinsic value.[1249]

534. Furthermore, contrary to Quandrant's suggestion, takeover targets generating acquisition premiums extend well beyond poorly managed companies,[1250] especially in the mining sector. In addition to the intrinsic value of a controlling stake in the target entity, a hypothetical acquirer of Odyssey would likely be motivated by the benefits arising from the synergies that it could extract from Don Diego.[1251] These would have included cost savings, revenue enhancement (*e.g.*, improved marketability of the product), and/or economies of scale.

535. Empirical data is central to this point. Regardless of what Quadrant would ask this Tribunal to believe, empirical evidence confirms that takeover premiums are regularly paid in the mining industry and usually in larger amounts than the one calculated by Compass Lexecon here (37.7% vs. 32.1.%).[1252]

536. Finally, Compass Lexecon correctly excluded "negative premiums" when calculating the acquisition premium based on a sample of 22 comparable mining transactions.[1253] As Compass Lexecon explains, "negative premiums" are inappropriate in deriving the FMV of a takeover target here because they arise in the context of share-swap transactions (*i.e.*, when shareholders' ownership of the target company's shares is exchanged for shares of the acquiring company) and/or transactions involving distressed shareholders, none of which is applicable to the present case.[1254]

1249 Compass Lexecon ER2, ¶ 116. Indeed, Quadrant's argument that acquisition value only has value to the would-be buyer fails to account for the market effects of any attempt to buy a controlling share of an enterprise.

1250 Among other reasons, Compass Lexecon lists the ability to issue and repurchase stock of the target entity; the power to distribute dividends; the power to sell the entity's assets; and the power to merge or liquidate the target company (*see* Compass Lexecon ER2, ¶ 116).

1251 As acknowledged even by the economics literature relied upon by Quadrant: *see* Quadrant ER, ¶ 77, fn. 94 and **QE-28**, Bradford Cornell, "Guideline Public Company Valuation and Control Premiums: An Economic Analysis," De Gruyter, pp. 2, 13-14, 17.

1252 Based on the average from the three sources mentioned in Compass Lexecon ER2, ¶¶ 117-119.

1253 Compass Lexecon ER1, ¶ 121 and fn. 143.

1254 Compass Lexecon ER2, ¶¶ 114-115.

3. Claimant's Permit Premium Is Appropriate

537. In order to correctly reconcile the DCF results with OMEX's market capitalization, Compass Lexecon also applied a one-time percentage increase to the OMEX share price to reflect the assumption in the But-For scenario of removal of the uncertainty related to the MIA (a "permit bump"). To calculate the permit premium, Compass Lexecon used as a comparator the actual increase in the stock price of five comparable publicly traded mining companies on the day the market learned that their flagship projects had received their respective environmental permits.[1255]

538. According to Quadrant, a permit bump would be unreasonable in this case because permit premiums only apply to instances where investors are "surprised" by unexpected positive events. In Quadrant's view, this would not be the case of Don Diego, where news about the approval of the MIA was already expected by market participants thanks to Odyssey's optimistic press releases, and therefore, there would have been no legitimate expectation of a sudden increase of Odyssey's stock price.[1256]

539. Mexico and Quadrant's (completely unsupported) opinion that Odyssey's stock price would have remained essentially the same with or without the approval of the MIA defies common sense and is at odds with Respondent's posture in this arbitration. To wit:

a. Quadrant agrees with Compass Lexecon that the Project was subject to permitting risk;[1257]

b. Quadrant agrees with Compass Lexecon that the lack of an environmental permit was one of the "impediment(s) to obtaining financing";[1258]

c. WGM notes that the "primary reason" a number of phosphate projects did not reach the "commercial production" stage was their inability to "obtain required environmental permits";[1259]

1255 Compass Lexecon ER1, ¶ 121 and fn. 144.

1256 Quadrant ER, ¶¶ 79-88. *See also* Respondent's Counter-Memorial, ¶ 702. As to Mexico's repeated argument that the MIA would not have changed the "speculative" nature of the Project, this has been rebutted above.

1257 Quadrant ER, ¶ 158.

1258 Quadrant ER, ¶ 29.

1259 WGM ER, ¶ 22.

d. According to WGM, a "Mineral Resource has the potential for eventual economic extraction, with the 'eventual' status contingent on a wide range of factors, not least of which are environmental permitting requirements";[1260]

e. In Mexico's opinion, approval of the MIA "was only a possibility on 6 April 2016."[1261]

540. Against this backdrop, Respondent cannot seriously deny that the removal of a significant risk (the approval of the MIA) would have resulted in a substantial increase of Odyssey's stock market price, as confirmed by Compass Lexecon.[1262]

541. In any case, Quadrant's self-serving opinion that optimistic language in companies' public statements prior to the approval of a key permit would automatically elide the investors' risk perception is disproved by the evidence and, ultimately, by simple common sense.

542. In its second report, Compass Lexecon discusses examples of mining companies that used optimistic language in their press releases, and still experienced a significant increase of their market capitalization on the day they announced environmental permit approval.[1263] For instance, the Zanaga Iron Ore company received its flagship project approval on 8 November 2017, and on the same date, its stock price increased by 65%.[1264] Its 2016 annual earnings report stated:[1265]

> . . . the Project team believes that this [environmental permit] is likely to be received during the second half of the 2017 fiscal year.

543. Therefore, there is no reason to believe that it would have been any different for Odyssey, had Mexico not unlawfully denied the approval of the MIA for its flagship project.

544. Furthermore, the existence and the intrinsic value of the permit premium are straightforward and even Quadrant cannot but acknowledge the fact that "an announcement by a pharmaceutical company that it has discovered a new vaccine or an announcement by an oil company that it has found new oil reserves can make the share

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1260 WGM ER, ¶ 45.
1261 Respondent's Counter-Memorial, ¶ 636.
1262 Compass Lexecon ER2, ¶¶ 121, 124-125.
1263 Compass Lexecon ER2, ¶¶ 122-123.
1264 Compass Lexecon ER2, ¶ 122.
1265 Compass Lexecon ER2, ¶ 122.

prices of those companies increase abruptly, and would justify using the new higher prices for valuation purposes."[1266]

545. In conclusion, the Tribunal should afford no weight to Quadrant's arbitrary disregard of Compass Lexecon's permit and acquisitions premiums.

G. The *In Situ* Phosphate Resource Value of Comparable Transactions Corroborates the Project's DCF and ROV Valuations

546. As a "sanity check" on Compass Lexecon's valuation of the Project of [redacted] using the DCF and ROV methodology and Quadrant's valuation of the Project of US$ 39.2 million (which it describes as a ceiling) using its contrived market capitalization approach,[1267] Claimant engaged Agrifos to value the Project independently using a market-based approach by looking at comparable transactions around the Date of Valuation.

547. To perform its valuation, Agrifos began with the Don Diego Project as it existed in April 2016 and used Mr. Lamb's estimate of 588.4 mt of Measured, Indicated and Inferred resources, with an average grade of [redacted] which equates to [redacted].[1268] It then identified nine comparable transactions and public companies with phosphate resource projects and calculated the USD value per metric tonne of contained phosphate in the underlying resource implied by the relevant transaction or market capitalization.[1269]

548. As explained by Agrifos:[1270]

> this method – value per unit of P_2O_5 contained in the resource – has the merits of allowing for comparisons across a range of comparable transactions and companies of different sizes, ore qualities and stages of development, many of which have yet to develop formal feasibility studies and firm commercial plans, and where other information may not be available. It is also a method frequently used by counterparties in negotiating values for actual

1266 Quadrant ER, ¶ 51 (emphasis added).
1267 Quadrant ER, ¶ 93.
1268 Agrifos ER, ¶ 17.
1269 Agrifos ER, ¶ 13.
1270 Agrifos ER, ¶ 13.

transactions for pre-production phosphate projects, including by Agrifos itself.

549. This analysis yielded a value per unit of P_2O_5 ranging from [redacted] and avcombined average of [redacted].[1271] Agrifos next evaluated whether there were factors (positive and negative) that would drive a higher (or lower) valuation for Don Diego within this range. Based on this evaluation, Agrifos has concluded that had the MIA been granted, the value for Don Diego would have been [redacted][1272]

550. Importantly, in identifying the comparable transactions and companies, Agrifos only included projects that (i) had resources and reserves identified through an exploration program; (ii) had not yet progressed to mine construction or commenced mining operations, and had no downstream phosphate chemical operations; (iii) had anticipated capital and operating cost structures that were low enough to make the projects plausibly competitive in the world market at that time; and (iv) were either permitted or not yet permitted with no known major obstacles.[1273] All of the comparable projects were pre-revenue and none reported having an off-take agreement or letter of intent.[1274]

551. Compared to these projects, Agrifos found that Don Diego benefited from a number of favorable attributes that would have driven a higher valuation. Key among them were:

a. The resource size – Don Diego had larger estimated resources than any of the comparable projects and unlike most also reported Measured resources;[1275]

b. The geological characteristics – The Don Diego resource is highly homogenous and continuous, thereby increasing confidence in the resource estimate and implying significant exploration potential;[1276] and

c. A highly competitive cost structure – Don Diego benefits from a significantly lower capital and operational expenses that comparable terrestrial phosphate projects

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1271 Agrifos ER, ¶¶, 15, 65.
1272 Agrifos ER, ¶ 21.
1273 Agrifos ER, ¶ 42.
1274 Agrifos ER, ¶ 52(k).
1275 Agrifos ER, ¶ 69.
1276 Agrifos ER, ¶ 69.

because it uses dredging. In addition, its offshore location enhances its logistics position.[1277]

552. Agrifos' estimated value of Don Diego confirms the reasonableness of Compass Lexecon's DCF and ROV valuation, and as Agrifos explains "[a]s a practical matter, counterparties generally combine DCF calculations for the resource in question with other valuation metrics, including a comparable analysis such as the one provided in [its] report."[1278] The difference between the two [redacted] is a consequence of the different approaches to valuation.

553. What is more, as an independent assessment – based on what real buyers paid for comparable phosphate projects Agrifos' valuation demonstrates that Quadrant has grossly understated Don Diego's FMV. Indeed, Agrifos' review "shows that Don Diego was equally or even more advanced than all the other comparable projects, all of which attracted meaningful valuations in the private or public marketplace. . . In short the phosphate industry places value – sometimes very significant value – on projects that have a well identified resource with attractive potential economics and strong development rationale even if such projects do not yet have permitting, offtake agreements or financing."[1279] Don Diego was such a project.[1280]

H. The Don Diego Deposit's Strategic Value Is Not Captured by Income Valuation and Must Be Included in Full Reparation

554. Although Mexico argues that the strategic value premium described in Mr. Longley's statement is unsupported, there is support in the record for this adjustment. Beyond Mr. Longley's overview of the global imbalances and potential for instability in the worldwide phosphate market, experts such as CRU describe specific market participants such as Agrium that would likely be investors motivated by strategic concerns. As CRU notes:[1281]

[redacted]

1277 Agrifos ER, ¶ 69.
1278 Agrifos ER, ¶ 50.
1279 Agrifos ER, ¶ 53.
1280 Agrifos ER, ¶ 53.
1281 Heffernan ER1, p. 79.

[redacted]

555. When coupled with [redacted] this indicates the likelihood of a premium that could be captured by Odyssey based on geopolitical or geographic characteristics of the deposit aligning with the strategic interests of an acquirer.

556. While Mexico queries why this premium was not included in the Compass Lexecon Expert Report, this type of premium would likely not be captured by a DCF calculation, because it would involve calculations by the purchaser of value elements outside cash flow parameters. This could include the anticipated value of what would essentially be insurance against certain global price shocks through the advantages of vertical integration in a geographically advantageous region, or the value of denying a regional competitor access to such a resource.[1282]

[1282] **CL-0189**, *Suez, Sociedad General de Aguas de Barcelona S.A., and Vivendi Universal S.A. v. The Argentine Republic (II)* (ICSID Case No. ARB/03/19) Award, 9 April 2015, ¶¶ 59-83, 87-103; **CL-0192**, *Uiterwyk Corporation., et al. v. The Government of the Islamic Republic of Iran, et al.* (IUSCT Case No. 381) Partial

557. In fact, as Mr. Longley notes, just in the time between his first and second witness statements, exactly the type of strategic issue arose that the Don Diego Project would have protected a phosphate industry player from, had the Project been permitted to go into operations. When the 400m, 224,000 tonne container vessel *Ever Given* became grounded on 23 March 2021, blocking all traffic in the Suez Canal, ships carrying phosphate rock from Morocco to Pacific rim and Indian Ocean processing facilities were blocked, threatening to cut off supply for weeks.[1283] A western Atlantic project such as Don Diego would have avoided that risk. Coincidentally, the only reason this incident did not devolve into a deeper crisis was the intervention of Boskalis, which was selected by the Suez Canal Authority as the dredging and marine services contractor to mobilize on an emergency basis and free the blocked vessel, which it did in under a week.

I. Tribunals Have Regularly Awarded Damages for the Lost Opportunity of Making Profits, Notwithstanding Potential Difficulties in Assessing Its Value

558. Mexico rejects ExO's claim for the lost opportunity to explore and develop those parts of the Don Diego deposit that were not covered by the NI 43-101 Technical Report prepared by Mr. Lamb.[1284] It asserts that Odyssey speculates as to the profitability of the operation and the existence, volume, and value of additional resources.[1285]

559. Difficulties can undoubtedly arise in valuing a lost opportunity claim where a state's actions have deprived a claimant of an opportunity to make profits. However, tribunals in both investment treaty and commercial[1286] claims involving states have repeatedly awarded compensation in these circumstances or have recognized that lost opportunity is a legitimate basis of damages in international law.

Award, 6 July 1988, ¶ 117; **CL-0196**, *Watkins-Johnsons Company, et al. v. The Islamic Republic of Iran, et al.* (IUSCT Case No. 370) Award, 28 July 1989, ¶¶ 114-117; **CL-0164**, *General Electric Company v. The Government of the Islamic Republic of Iran, et al.* (IUSCT Case No. 386) Award, 15 March 1991, ¶¶ 67-69.

1283 **C-0457**, V.S. Kumar, "Suez Canal Closure: EXIM Trade in Kochi Anticipate Painful Days Ahead," Business Line, 29 March 2021.

1284 Respondent's Counter-Memorial, ¶¶ 708-710.

1285 Respondent's Counter-Memorial, ¶ 709.

1286 For example, UNIDROIT Principles of International Commercial Contracts (2010), art. 7.4.3(2). (**CL-0193**, UNIDROIT Principles of International Commercial Contracts (2010), art. 1.4.3 Commentary, pp. 270, 275.)

560. The tribunal in *Gemplus*[1287] awarded compensation for the lost opportunity of making profits from operating a national vehicle registry, recognizing that Mexico needed a vehicle registry, that the concessionaire was best placed to run it, and that the opportunity had monetary value even if there was more than a 50% probability that the project would fail.[1288] The Tribunal specifically noted that the difficulty of valuing the lost opportunity had been exacerbated by Mexico's breaches, "which have made it almost impossible for the Claimants to show how the Concessionaire could or would have made use of that lost opportunity . . . it would be wrong in principle to deprive or diminish the Claimants of the monetary value of that lost opportunity on lack of evidential grounds when that lack of evidence is directly attributable to [Mexico's] own wrongs."[1289]

561. *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt*[1290] concerned the expropriation of land lawfully but without due compensation. Damages were awarded for the claimant's lost opportunity of turning its intended development project into a commercial success. The tribunal noted, "it is well settled that the fact that damages cannot be assessed with certainty is no reason not to award damages when a loss has been incurred" even if "[t]his determination necessarily involves an element of subjectivism, and consequently, some uncertainty."[1291] The value of the lost opportunity was calculated on the basis of "very few" sales of land within the development that had been concluded before cancellation of the project.

562. *Marco Gavazzi and Stefano Gavazzi v. Romania*[1292] was a dispute arising from the privatization of a steel company in Romania. Here, a claim for loss of profit was not

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1287 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010.

1288 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-76.

1289 **CL-0054**, *Gemplus, et al. v. United Mexican States* (ICSID Case Nos. ARB(AF)/04/3 and ARB(AF)/04/4) Award, 16 June 2010, ¶¶ 13-99.

1290 **CL-0187**, *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt* (ICSID Case No. ARB/84/3) Award on the Merits, 20 May 1992.

1291 **CL-0187**, *Southern Pacific Properties (Middle East) Limited v. Arab Republic of Egypt* (ICSID Case No. ARB/84/3) Award on the Merits, 20 May 1992, ¶ 215.

1292 **CL-0175**, *Marco Gavazzi and Stefano Gavazzi v. Romania* (ICSID Case No. ARB/12/25) Award, 18 April 2017 (Excerpts).

available, as the steel company was on the verge of bankruptcy and was not a going concern. However, the Tribunal had no doubt that the claimant had suffered damage, concluding that the difficulty in quantifying losses "provides no justification in refusing any compensation to an innocent party, leaving the wrongful party with the fruits of its wrongdoing."[1293] The tribunal applied "a rule of reason, rather than a rule requiring absolute certainty in calculating compensation."[1294] The tribunal relied on the UNIDROIT Principles and *SPP v. Egypt*, noting that it was "conscious that its calculations of loss of opportunity cannot be a rigorous scientific, mathematical or forensic exercise."[1295] Damages were awarded in the measure of 50% of the amount of the claimant's investment, this being "the minimum damage" claimant had suffered.

563. The *Gavazzi* tribunal also made an interesting observation about the reversal of the burden of proof in connection with the loss of chance quantification: "Where a claimant as the innocent party has difficulty in proving its compensation, particularly as regards future events, because of the wrongdoer's acts or omissions, the wrongdoer should not be permitted to escape liability for compensation as a direct result of the difficulty or resulting uncertainty for which that wrongdoer is responsible. At that point, the evidential burden regarding uncertainty shifts from the innocent party to the guilty party. Otherwise, the guilty party would profit unfairly from its own wrong."[1296]

564. The *Bilcon*[1297] tribunal also considered lost opportunity. It recognized that the claimant was deprived of the opportunity to have the project's environmental impact "assessed in a fair and non-arbitrary manner."[1298] In determining the value of that lost opportunity,

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1293 **CL-0175**, *Marco Gavazzi and Stefano Gavazzi v. Romania* (ICSID Case No. ARB/12/25) Award, 18 April 2017 (Excerpts), ¶ 121.

1294 **CL-0175**, *Marco Gavazzi and Stefano Gavazzi v. Romania* (ICSID Case No. ARB/12/25) Award, 18 April 2017 (Excerpts), ¶ 121.

1295 **CL-0175**, *Marco Gavazzi and Stefano Gavazzi v. Romania* (ICSID Case No. ARB/12/25) Award, 18 April 2017 (Excerpts), ¶ 223.

1296 **CL-0175**, *Marco Gavazzi and Stefano Gavazzi v. Romania* (ICSID Case No. ARB/12/25) Award, 18 April 2017 (Excerpts), ¶ 224.

1297 **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton, and Bilcon of Delaware, Inc. v. The Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019.

1298 **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton, and Bilcon of Delaware, Inc. v. The Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019,¶ 280.

the tribunal relied on (i) the amounts the claimant had expended[1299] and (ii) past transactions regarding the quarry site.[1300]

565. Damages for the lost opportunity to profit have also been awarded in commercial arbitration awards against states, for example, in the following published awards:

a. In *Sapphire International Petroleum Ltd. v. National Iranian Oil Company,*[1301] a portion of anticipated lost profits were awarded as compensation for the lost opportunity of finding oil.[1302] The arbitrator stated, "[where] the existence of damage is uncertain, case law has looked at the position at the time when the opportunity was lost and has accepted that this opportunity itself has a value whose loss gives rise to compensation," using his discretion to award damages and noting, "it is not necessary to prove the exact damage suffered in order to award damages. On the contrary, when such proof is impossible, particularly as a result of the behaviour of the author of the damage, it is enough for the judge to be able to admit with sufficient probability the existence and extent of the damage."[1303]

b. In *Enron Nigeria Power Holding, Ltd. v. Lagos State Government (Nigeria),*[1304] a tribunal determined that Lagos State had breached a contract for the construction and development of a number of electricity generating units and a power plant. The claim for lost profits was rejected because of uncertainties, most importantly the collapse of Enron.[1305] However, the tribunal awarded damages for the loss of the opportunity to make profits, noting, "had the Project gone ahead . . . the Tribunal has no doubt it would have been profitable,"[1306] and that claimant was deprived of "the opportunity to design, finance, construct own and operate the power plant and the gas pipeline."[1307] The tribunal determined the value of the

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1299 **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton, and Bilcon of Delaware, Inc. v. The Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019,¶¶ 281-287.

1300 **CL-0123**, *William Richard Clayton, Douglas Clayton, Daniel Clayton, and Bilcon of Delaware, Inc. v. The Government of Canada* (PCA Case No. 2009-04) Award on Damages, 10 January 2019, ¶¶ 288-299.

1301 **CL-0185**, *Sapphire International Petroleums Ltd. v. National Iranian Oil Company* (Ad hoc Arbitration) Arbitral Award, 15 March 1963.

1302 **CL-0185**, *Sapphire International Petroleums Ltd. v. National Iranian Oil Company* (Ad hoc Arbitration) Arbitral Award, 15 March 1963, pp. 47-48.

1303 **CL-0185**, *Sapphire International Petroleums Ltd. v. National Iranian Oil Company* (Ad hoc Arbitration) Arbitral Award, 15 March 1963, pp. 44-45.

1304 **CL-0159**, *Enron Nigeria Power Holding (ENPH) v. Federal Republic of (Nigeria* (ICC Case No. 14417/EBS/VRO/AGF) Final Award, 19 November 2012.

1305 **CL-0159**, *Enron Nigeria Power Holding (ENPH) v. Federal Republic of Nigeria* (ICC Case No. 14417/EBS/VRO/AGF) Final Award, 19 November 2012, ¶ 105.

1306 **CL-0159**, *Enron Nigeria Power Holding (ENPH) v. Federal Republic of Nigeria* (ICC Case No. 14417/EBS/VRO/AGF) Final Award, 19 November 2012, ¶ 98.

1307 **CL-0159**, *Enron Nigeria Power Holding (ENPH) v. Federal Republic of Nigeria* (ICC Case No. 14417/EBS/VRO/AGF) Final Award, 19 November 2012, ¶ 111.

lost opportunity by reference to the indicative price of an unexercised contractual option to purchase the power plant, which was then discounted to account for the project's contingencies.[1308]

566. Respected tribunals have therefore repeatedly decided that damages can be awarded where a state's wrongful acts have deprived a claimant of a proven opportunity to profit.[1309] A tribunal should do this notwithstanding the inherent complexity in calculating the value of the opportunity, particularly when those difficulties arise because it is the state that has prevented the claimant from progressing the opportunity.

1. ExO Lost a Real Opportunity to Make Profits from the Unexplored Resource and Should Be Compensated

567. Here, Mexico wrongfully denied the MIA and, in so doing, wrongfully denied ExO the opportunity to commence a new coring campaign to further explore, quantify, characterize and exploit the unexplored resource in its Concessions. The lost opportunity arises in two ways. First, there is additional resource in the unexplored areas. Second, a substantial proportion of the assayed cores terminated in commercial grade ore, meaning there is undoubtedly more ore at greater sediment depths.

568. Mexico complains that the lost opportunity claim is unsupported by expert evidence. It is right that the lack of coring data means the unexplored resource cannot be assessed under the CIMVAL and VALMIN guidelines and standards and categorized as measured, indicated, and inferred resources. This is why the resource is not included in the DCF model developed by Compass Lexecon. However, additional coring data is lacking precisely because Mexico has prevented ExO from undertaking the work necessary to

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1308 **CL-0159**, *Enron Nigeria Power Holding (ENPH) v. Federal Republic of Nigeria* (ICC Case No. 14417/EBS/VRO/AGF) Final Award, 19 November 2012, ¶¶ 116-127.

1309 In addition, other tribunals have recognized claims for lost opportunity but have decided they were not available on the facts: **CL-0022**, *Burlington Resources Inc. v. Republic of Ecuador* (ICSID Case No. ARB/08/5) Decision on Reconsideration and Award, 7 February 2017; **CL-0160**, *Flemingo DutyFree Shop Private Limited v. The Republic of Poland* (PCA Case No. 2014-11) Award, 12 August 2016; **CL-0171**, *Kontinental Conseil Ingénierie v. Gabonese Republic* (PCA Case No. 2015-25) Award, 23 December 2016; **CL-0065**, *Joseph Charles Lemire v. Ukraine* (ICSID Case No. ARB/06/18) Award, 28 March 2011. Also see the reasoning of the Annulment Committee in **CL-0213**, *Perenco Ecuador Limited v. Republic of Ecuador* (ICSID Case No. ARB/08/06), Decision on Annulment, 28 May 2021.

assess the resource under these guidelines and standards. Experts have recognized the likely value contained in the unexplored areas:

a. As noted in Odyssey's Memorial,[1310] Mr. Lamb stated in his NI 43-101 Technical Report that Odyssey and ExO had only just begun to quantify and characterize the Don Diego Deposit, which he recognized was open to the north, to the south, to the west, and at depth. Mr. Lamb confirmed that the Don Diego Norte and Sur Concessions had "significant potential to increase [ExO's] phosphorite resources."

b. Further, the limited exploration conducted of the Don Diego Norte Concession had already increased the amount of measured, indicated, and inferred resources [redacted],[1311] which demonstrates that it is likely that further exploration would also confirm significant additional resources.

c. [redacted][1313]. [redacted]."[1314]

d. [redacted].[1315]

1310 Claimant's Memorial, ¶ 417

1311 Claimant's Memorial ¶ 417; C-0223, Don Diego West Resource Estimate With Northern Extension, 21 August 2014

1312 Selby ER2 ¶ 30

1313 Selby ER2 ¶¶ 37, 53.

1314 Selby ER2 ¶ 43

1315 Agrifos ER ¶ 16; *see also* Claimant's Memorial, ¶ 53; Longley WS, ¶¶ 39-40; **C-0084**, Henry Lamb, NI 43-101 Technical Report, 30 June 2014, p. 28.

569. The Tribunal must therefore consider how best to compensate ExO's lost opportunity, as tribunals have done in the *Gemplus* and other cases cited above. There are various potential methodologies to calculate this lost opportunity but, as explained by John Longley,[1316] the Odyssey team has done so by reference to the *in situ* value of the P_2O_5 and the number of tonnes it estimates the unexplored resource contains, seeking to adopt a conservative approach in the assumptions that have been applied. This is exactly the kind of exercise that the hypothetical "business people" referenced by the *Gemplus* tribunal could carry out. Damages should be awarded for ExO's lost opportunity claim in the sum requested.

J. The Pre-Award Interest Rate Should be the WACC

570. In its Memorial, Claimant explained that in accordance with customary international law, it was entitled to "full reparation" as compensation for the damages it suffered as a result of Mexico's wrongful acts.[1317] Claimant also explained that this principle of full reparation should be applied to the calculation of interest as well,[1318] and that to compensate it fully, the Tribunal should issue an award with a 13.95% pre-award interest rate, equivalent to the weighted average cost of capital (WACC) of a typical investor in a pre-operational mining project in Mexico, compounded annually.[1319]

571. In its Counter-Memorial, Mexico accepts that Claimant is entitled to compound interest on any amounts awarded.[1320] Its quarrel is limited to what that rate of interest should be. In that regard, Mexico alleges that "the only guidance in the NAFTA as to the applicable interest rate is provided in Article 1110(4)," which provides that "compensation shall include interest at a commercially reasonable rate."[1321]

572. Relying on Quadrant, Mexico claims that the Tribunal should calculate interest using a risk-free rate, which it avers is commercially reasonable, instead of the WACC, as Compass

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1316 Longley WS1, ¶¶ 35-47, and WS2, ¶¶ 4-16.
1317 Claimant's Memorial, ¶¶ 364, 373.
1318 Claimant's Memorial, ¶¶ 423-424.
1319 Claimant's Memorial, ¶¶ 426, 428.
1320 Respondent's Counter Memorial, Section IV.D.8 (addressing interest).
1321 Respondent's Counter Memorial, ¶ 716.

Lexecon has done.[1322] This position is wrong on a number of levels and should be rejected.

573. First, the purpose of pre-award interest is compensatory.[1323] As Compass Lexecon explains in its second report, Mexico's wrongful actions deprived Claimant of the use of money that it would otherwise have had available.[1324] That type of injury goes beyond the time-value of money.[1325] It manifests in the cost of capital and thus for Claimant to be made whole, the cost of capital must be reflected in the rate of pre-award interest. Compass Lexecon has determined that rate is 13.95%, equivalent to the WACC of a typical investor in a pre-operational mining project in Mexico.[1326]

574. The use of WACC is appropriate because it is anchored in the underlying risk profile of the investment and is the rate of return that investors would demand when deciding whether to invest in the Project.[1327] Put differently, using WACC matches the risk associated with the Project and the expected return, while using a lower rate would result in a financial loss as compared to a situation in which the breach had not occurred.[1328] Many tribunals have granted pre-award interest at a rate equivalent to the relevant WACC.[1329]

1322 Respondent's Counter Memorial, ¶ 716; Quadrant ER, ¶ 107.

1323 **CL-0059**, International Law Commision, *Draft Articles on Responsibility of States for Intentionally Wrongful Acts, with Commentaries*, (2001), art. 38(1) ("Interest on any principal sum due under this chapter shall be payable when necessary in order to ensure full reparation. The interest rate and mode of calculation shall be set so as to achieve that result."); **CL-0011**, *Asian Agricultural Products Ltd. (AAAPL) v. Republic of Sri Lanka* (ICSID Case No. ARB/87/3) Final Award, 27 June 1990, ¶ 114; **CL-0075**, *Middle East Cement Shipping and Handling Co SA v. Arab Republic of Egypt* (ICSID Case No. ARB/99/6) Award, 12 April 2002, ¶ 174 ("[I]nternational jurisprudence and literature have recently, after detailed consideration, concluded that interest is an integral part of the compensation due."); **CL-0208,** J.Y. Gotanda and T. Senechal, "Interest as Damages," Villanova University Charles Widger School of Law (2009), p. 510.

1324 Compass Lexecon ER2, ¶¶ 164-165. *See also* **CL-0037,** *Compañía de Aguas del Aconquija SA and Vivendi Universal SA v Argentine Republic* (ICSID Case No ARB/97/3) Award, 20 August 2007, ¶ 9.2.3 ("The object of an award of interest is to compensate the damage resulting from the fact that, during the period of non-payment by the debtor, the creditor is deprived of the use and disposition of that sum he was supposed to receive.").

1325 **CL-0209**, M.A. Abdala, et al., "Invalid Round Trips in Setting Pre-Judgment Interest in International Arbitration," in: *World Arbitration & Mediation Review*, Vol. 5, No. 1 (2011), pp. 10-11.

1326 Compass Lexecon ER1, ¶ 14; Compass Lexecon ER2, ¶ 161.

1327 *See, e.g.,* **CL-0208,** J.Y. Gotanda and T. Senechal, "Interest as Damages," Villanova University Charles Widger School of Law (2009), p. 510.

1328 Compass Lexecon ER2, ¶¶ 162-165.

1329 *See, e.g.,* **CL-0218**, *Vantage Deepwater Company et al. v. Petrobras America Inc. et al.* (ICDR Case No. 01-15-0004-8503) Final Award, 29 June 2018, ¶¶ 461-464; **CL-0204**, *ArcelorMittal USA LLC v. Essar Steel Ltd.*

575. In response, Quadrant argues using WACC for pre-award interest wrongly assumes that Claimant would have invested "any funds received from this Arbitration . . . in endeavors with the same risks as Don Diego."[1330] But this misses the point. Compass Lexecon explains: "the cost of funding and the delay in collecting the award is akin to any other reinvestment in the Project, which commands a financing cost equal to the WACC of the Project. No investor would have willingly invested monies into the Don Diego Project for a return lower than the Project's WACC."[1331] Consequently, using WACC restores Claimant to the financial position "it would have been [in] had it willingly accepted the temporary deprivation of rights but for the damage (including the delay in collection), and not based on speculative assessments about alternative investment opportunities or on the likely outcome of the reinvestment of the award, within or outside the affected business."[1332]

576. Second, using a risk-free rate, as Quadrant advances,[1333] would vastly undercompensate Claimant and does not meet the *Chorzów Factory* full reparation standard, as confirmed by a number of arbitral decisions.[1334] As the Date of Valuation, the yield of US one-year

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(ICC Case No. 22187/RD/MK, 19 December 2017, ¶¶ 159-160; and **CL-0205**, *BBA and others v. BAZ and another appeal* (2020 SGCA 53, Court of Appeal of the Republic of Singapore) Judgment, 28 May 2020, ¶ 24. *See also* **CL-0211**, *Mobil Exploration and Development Inc., Suc. Argentina and Mobil Argentina S.A. v. Republic of Argentina* (ICSID Case No. ARB/04/16) Updated Valuation Report of Nils Janson, 11 November 2013, ¶¶ 195-223 (neutral expert report submitted pursuant to the tribunal's instructions in *Mobil Exploration and Development Inc., Suc.l Argentina and Mobil Argentina S.A. v. Republic of Argentina* (ICSID Case No. ARB/04/16) Award, 25 February 2016. In the *Mobil* case, the tribunal-appointed expert agreed with Compass Lexecon on the use of the claimant's WACC (in that case, 10.4%) as the pre-award interest rate. Disregarding its own appointed expert, the *Mobil* tribunal instead used 6%, reasoning in part that 10.4% would be excessive in light of "the impact of the [2001-2002 domestic financial] crisis on the Argentine economy." **CL-0210**, *Mobil Exploration and Development Inc., Suc. Argentina and Mobil Argentina S.A. v. Republic of Argentina* (ICSID Case No. ARB/04/16) Award, 25 February 2016, ¶ 290. No such consideration applies to Mexico in this case.

1330 Quadrant ER, ¶ 103.

1331 Compass Lexecon ER2, ¶ 164.

1332 **CL-0209**, M.A. Abdala, et al., "Invalid Round Trips in Setting Pre-Judgment Interest in International Arbitration," in: *World Arbitration & Mediation Review*, Vol. 5, No. 1 (2011),p. 16.

1333 Quadrant ER, ¶ 102.

1334 *See, e.g.,* **CL-0088**, *Phillips Petroleum Company Venezuela Limited and ConocoPhillips Petrozuata B.V. v. Petróleos de Venezuela, S.A.* (ICC Case No.16848/JRF/CA) Final Award, 17 September 2021, ¶ 295 (holding that a LIBOR rate would fail to ensure the claimant's full compensation); **CL-0218**, *Vantage Deepwater Company et al. v. Petrobras America Inc. et al.* (ICDR Case No. 01-15-0004-8503) Final Award, 29 June 2018, ¶¶ 462-464 (holding that a risk-free rate "would not suffice to make Claimants whole"); **CL-0116**, *Tethyan Copper Company Pty Limited v. Islamic Republic of Pakistan* (ICSID Case no. ARB/12/1) Award, 12 July 2019,

Treasury Bill was only 0.52%.[1335] That rate is unreasonable on its face -- no investor would have invested in a mining project in Mexico for such a meager return. Moreover, the US long-term inflation forecast as of the Date of Valuation was around 2.38%, which implies that the real interest rate would be negative.[1336]

577. Further, the inadequacy of using the risk-free rate for pre-award interest becomes apparent once it is applied to Claimant's discounted cash flows. As discussed above, Compass Lexecon discounted the Project cash flows to the Date of Valuation using risk-adjusted rates: a WACC of 13.95% for Phase I and a WACC of 15.95% for Phase II. However, if cash flows are discounted to the date of valuation using a risk-adjusted discount rate, and they are then brought forward to the date of award using a risk-free rate, the result is under-compensatory.[1337] This is illustrated in the chart below.

¶ 1792 (holding that the application of a risk free rate would not "adequately capture the damage that Claimant has incurred.").

1335 Compass Lexecon ER2, ¶ 168.

1336 Compass Lexecon ER2, ¶ 168. The *Bear Creek* tribunal confirmed that a risk-free rate would not be "commercially reasonable" if lower than the respondent's cost of borrowing: **CL-0016**, *Bear Creek Mining Corporation v. Republic of Peru* (ICSID Case No. ARB/14/21) Award, 30 November 2017, ¶ 713. To conclude otherwise, as explained by Compass Lexecon (Compass Lexecon ER2, ¶ 171), would result in a financial benefit for the Respondent. Indeed, as confirmed by the tribunal in *ConocoPhilips v. Venezuela*, awarding interests at a risk-free rate would "make it substantially attractive for [Respondent] to borrow money from the investor at such rate . . . instead of paying a significantly higher market rate for borrowing money." **CL-0158,** *ConocoPhillips Petrozuata B.V., ConocoPhillips Hamaca B.V. and ConocoPhillips Gulf of Paria B.V. v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB/07/30, Award, 8 March 2019, ¶ 815. Accordingly, the pre-award interest rate cannot in any case be lower than the Respondent's own cost of borrowing which has been calculated by Compass Lexecon to be 4.9%: see Compass Lexecon ER2, ¶ 171.

1337 This is a very different scenario than that described by Quadrant by quoting Kantor's *Valuation for Arbitration* (see Quadrant ER, ¶ 105 and **QE-32**, Mark Kantor, "Valuation for Arbitration: Compensation Standards, Valuation Methods and Expert Evidence," Kluwer Law International, 2008, p. 49). A more careful reading of Mr. Kantor's work reveals that the author was comparing *historic* earnings with *future* earnings which cannot be "brought forward" using the same discount rate. In the present case, all of Claimant's cash flows relate to future earnings and need to be "brought forward" to the date of award (rather than the date of valuation mentioned by Mr. Kantor) using the 13.95% WACC rate to ensure full compensation.

578. Finally, contrary to Mexico's contentions, WACC is a commercially reasonable rate, contrary to Mexico's allegations.[1338] This is because "all market rates could be described as 'commercial'; the difference between rates is that they relate to different risks. The commercial rate for a risk-free loan is not the same as the commercial rate for a risky loan."[1339] As explained above, a risk-free rate would not adequately compensate Claimant for the associated project risk. Furthermore, as explained by Compass Lexecon, the WACC is used to transact mining assets like Don Diego in the stock market and private transactions, and therefore by definition is commercially reasonable.[1340]

579. In conclusion, the 13.95% WACC rate for pre-award interest is necessary to fully compensate Claimant. Anything lower would violate the principle of full reparation and would be unfair to Claimant.

1338 Respondent's Counter Memorial, ¶ 716.

1339 **CL-0206**, J. Dow, "Chapter 21: Pre-Award Interest," in: J.A. Trenor, ed., *The Guide to Damages in International Arbitration*, Global Arbitration review (GAR) (4th. ed. 2021), p. 307.

1340 Compass Lexecon ER2, ¶¶ 166-167.

K. The Damages Award Must Avoid Taxing Claimant Twice

580. As explained in the Memorial,[1341] the calculation of damages owed to Odyssey is net of Mexican taxes. Any taxation by Mexico of the award would result in Odyssey being effectively taxed twice for the same income. That would be impermissible, as confirmed by the *jurisprudence constante* of investment tribunals.[1342]

581. Mexico does not dispute this principle and accepts that the award should be exempt from taxation.[1343] However, Mexico objects to the tax gross-up requested by Claimant on the grounds that (i) the tax gross-up would be calculated based on the DCF cash flows, itself an allegedly inappropriate method of valuation in the present case, and (ii) Claimant would have allegedly failed to properly account for ExO's operating losses.[1344] Both allegations are incorrect. The appropriateness of an income-based valuation in this case has been already demonstrated above. As to ExO's operating losses, these have been properly accounted for in Compass Lexecon's model.[1345]

582. In a further attempt to reduce the value of ExO's damages, Mexico claims that Compass Lexecon artificially increased its damages calculation by omitting from its cash flow analysis the mandatory 10% Worker's Profit Share, known for its Spanish abbreviation "PTU."[1346] Mexico's assertion with respect to PTU, however, is misplaced because it ignores basic PTU practices that would have been available to ExO as of April 2016.

1341 Claimant's Memorial, ¶ 432.

1342 **CL-0099**, *Rusoro Mining Limited v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB (AF)/12/5) Award, 22 August 2016, ¶¶ 852-855 (recognizing that if Venezuela were to tax the award, it could "reduce the compensation 'effectively' received," and therefore declaring that "the compensation, damages and interest granted in this Award are net of any taxes imposed by [Venezuela]" and ordering Venezuela "to indemnify [the investor] with respect to any Venezuelan taxes imposed on such amounts"); **CL-0088**, *Philips Petroleum Company Venezuela Limited and ConocoPhillips Petrozuata B.V. v. Petróleos de Venezuela S.A.* (ICC Case No 16848/JRF/CA) Final Award, 17 September 2012, ¶¶ 313, 333(1)(vii); **CL-0115**, *Tenaris SA and Talta – Trading e Marketing Sociedade Unipessoal LDA v. Bolivarian Republic of Venezuela II* (ICSID Case No. ARB/12/23) Award, 12 December 2016, ¶¶ 788-792; **CL-0158**, *Conocophillips Petrozuata B.V., Conocophillips Hamaca B.V. and Conocophillips Gulf of Paria B.V. v. Bolivarian Republic of Venezuela* (ICSID Case No. ARB/07/30) Award, 8 March 2019, ¶¶ 955-957; **CL-0165**, *Glencore International A.G. and C.I. Prodeco S.A. v. Republic of Colombia* (ICSID Case No. ARB/16/6) Award, 27 August 2019, ¶¶ 1623-1630.

1343 Respondent's Counter-Memorial, ¶¶ 712-713.

1344 Respondent's Counter-Memorial, ¶ 712.

1345 Compass Lexecon ER1, ¶ 64, 82; Compass Lexecon ER2, fn. 29.

1346 Mexico's Counter Memorial, ¶ 713.

583. Pursuant to Article 15-A of the Mexican Labor Law,[1347] companies in Mexico routinely implemented dual structures in which they would incorporate services entities (separate from the operating entity) to serve as an outsourcing entity. The operating company was not considered an employer for purposes of PTU and profits generated by it would not have been shared with personnel placed within the services entities. In practice, the operating company would only employ directly a number of managerial positions, who would not be entitled to PTU.[1348] These employees would carry out the general functions of the company directly and the rest of the activities would be carried out by the services entity.

584. Thus, based on the above labor regulations and common practice in Mexico, ExO would have been able to avoid payment of any of its profits by implementing this structure. ExO, as many other companies, would have been able to implement an efficient labor structuring to reduce PTU's impact on profits.

VI. REQUEST FOR RELIEF

585. For the foregoing reasons, Claimant respectfully submits that the Tribunal should:

a. **DECLARE** that the Tribunal has jurisdiction to entertain all of Claimant's claims under Chapter 11 of NAFTA, as set forth in this proceeding;

b. **DECLARE** that Mexico violated NAFTA Article 1105(1) by failing to accord Claimant and ExO with treatment in accordance with international law including fair and equitable treatment and full protection and security;

1347 **C-0382**, Ley Federal del Trabajo, 12 June 2015, art. 15-A ("Work in the outsourcing regime is that in which an employer-named contractor performs works or renders services with its employees under its dependence, in favor of a beneficiary, an individual or company, which directs the work of the contractor and supervises it in the development of services or in the performance of the contracted works. This type of work shall comply with the following conditions: a) Shall not encompass the entirety of the activities, equal or similar in their entirety, that are developed in the work center. b) Shall be justified by their specialized nature. c) Shall not encompass equal or similar tasks to the ones performed by the rest of the employees at the service of the beneficiary. If these conditions are not met, the beneficiary shall be considered the employer to all the effects of this Law, including for social security obligations.") (free translation).

1348 **C-0382**, Ley Federal del Trabajo, 12 June 2015, art. 127 ("The employees' right to participate in profit sharing will be adjusted to the following rules. I. Directors, administrators and general managers of companies shall not participate in profits.") (free translation).

c. **DECLARE** that Mexico violated NAFTA Article 1110(1) by indirectly expropriating Claimant's and ExO's investments;

d. **DECLARE** that Mexico violated NAFTA Article 1102 by according Claimant and ExO with treatment less favorable than it accords, in like circumstances, to its own investors;

e. **ORDER** that Mexico pay Claimant and ExO money damages of no less than $2,676,300,000 (gross of taxes) plus compounding interesting of 13.95%, when the Tribunal issues its final award;

f. **ORDER** Mexico to reimburse Claimant the full costs of the arbitration, including without limitation, all arbitrators' fees and other costs, all of the Center's administration fees, attorneys' fees and other costs, fees, and expenses incurred by Claimant in connection with pursuing this arbitration, in an amount to be calculated at the conclusion of these proceedings and payable in U.S. dollars;

g. **DECLARE** that the Tribunal's arbitral award shall be immediately enforceable notwithstanding any recourse filed against it; and

h. **ORDER** such further relief as the Tribunal considers appropriate.

586. Claimant hereby expressly reserves the right to supplement, add, or amend the claims asserted in its Memorial or Reply Memorial, according to the circumstances considered in the course of arbitration proceedings.

Dated: 29 June 2021
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