

INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA



2012

Public sitting

held on Tuesday, 9 October 2012, at 10 a.m.,
at the International Tribunal for the Law of the Sea, Hamburg,

President Shunji Yanai presiding

THE M/V “LOUISA” CASE

(Saint Vincent and the Grenadines v. Kingdom of Spain)

Verbatim Record

<i>Present:</i>	President	Shunji Yanai
	Vice-President	Albert J. Hoffmann
	Judges	Vicente Marotta Rangel
		L. Dolliver M. Nelson
		P. Chandrasekhara Rao
		Joseph Akl
		Rüdiger Wolfrum
		Tafsir Malick Ndiaye
		José Luís Jesus
		Jean-Pierre Cot
		Anthony Amos Lucky
		Stanislaw Pawlak
		Helmut Tuerk
		James L. Kateka
		Zhiguo Gao
		Boualem Bouguetaia
		Vladimir Golitsyn
		Jin-Hyun Paik
		Elsa Kelly
		David Attard
		Markiyana Kulyk
	Registrar	Philippe Gautier

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and

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and

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Mr Carlos Jiménez Piernas, Professor, International Law Department, Universidad de Alcalá de Henares, Spain,

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Mr José Lorenzo Outón, Legal Adviser, Ministry of Foreign Affairs and Cooperation,

as Counsel;

Mr Diego Vázquez Teijeira, Technical Counsel at the Directorate-General of Energy and Mining Policy, Ministry of Industry, Energy and Tourism,

as Adviser.

1 **THE PRESIDENT:** Good morning. We will continue today the hearing in the
2 *M/V Louisa* case. Before I give the floor again to the Agent of Spain to continue, let
3 me say one thing. I regret that yesterday evening when concluding the sitting I forgot
4 to thank the expert witness Ms Martínez de Azagra Garde. Therefore, I would like to
5 ask the delegation of Spain to convey to Ms Martínez de Azagra Garde the gratitude
6 of the Tribunal for her testimony. She is still here. Thank you very much, Ms
7 Martínez de Azagra Garde. I am very glad to have you here again.

8
9 Ms Escobar Hernández, you have the floor.

10
11 **MS ESCOBAR HERNÁNDEZ** (*Interpretation from French*): Thank you, Mr President.
12 Good morning, honourable Judges. We would like to continue today's work with
13 testimony from three experts. I would therefore ask you please to call Mr Dorrik
14 Stow. With your permission, Mr President, I would ask if Professor Mariano Aznar
15 Gómez could examine Mr Stow.

16
17 **THE PRESIDENT:** The Tribunal will proceed to hear the expert, Mr Stow. He may
18 now be brought into the courtroom.

19
20 I now call upon the Registrar to administer the solemn declaration to be made by the
21 expert.

22
23 **THE REGISTRAR** (*Interpretation from French*): Thank you, Mr President.
24 (*Continued in English*) Good morning, Mr Stow. Before giving any statement, an
25 expert has to make the solemn declaration required under article 79 of the Rules of
26 the Tribunal. You have the declaration in front of you. May I invite you, Mr Stow, to
27 make the solemn declaration?

28
29 ***The witness, MR DORRIK STOW, made the solemn declaration***

30
31 **THE REGISTRAR:** Thank you, Mr Stow. Mr President.

32
33 **THE PRESIDENT:** Thank you, Mr Registrar. Before we start the examination of the
34 expert, may I remind the Parties and you, Mr Stow, to speak slowly to facilitate the
35 work of the interpreters and the verbatim reporters.

36
37 I now give the floor to Mr Aznar Gómez.

38
39 **MR AZNAR GÓMEZ:** Thank you, Mr President, distinguished Judges.

40
41 **Examined by MR AZNAR GÓMEZ**

42
43 **MR AZNAR GÓMEZ:** Good morning, Mr Stow. Could you please say your complete
44 name, address and current affiliation?

45
46 **MR STOW:** I am Professor Dorrik Stow from the Institute of Petroleum Engineering,
47 Heriot-Watt University, Edinburgh, United Kingdom.

48

1 **MR AZNAR GÓMEZ:** Could you please summarize your experience, national and
2 international, in relation to geological research and geophysics studies of marine
3 hydrocarbons?
4

5 **MR STOW:** I have been involved in geological and geophysical research, in
6 exploration and in consultancy, for the oil industry for 35 years. I have worked
7 nationally and internationally in many regions of the world. I am a marine
8 geoscientist, geophysicist and petroleum geologist. I have five years of direct
9 experience within the oil industry, in the British National Oil Corporation, in BP, and
10 30 years in the university working on research programmes and consultancies
11 funded by the oil industry. I am currently the head of the Institute of Petroleum
12 Engineering at Heriot-Watt University.
13

14 **MR AZNAR GÓMEZ:** Have you any experience with geological research and
15 geophysical studies of marine hydrocarbons in the Bay and Gulf of Cádiz?
16

17 **MR STOW:** Yes. I have been very interested and actively involved in the Gulf of
18 Cádiz as a marine geologist and geophysicist since 1984. Most recently, in the past
19 year, I was the chief scientist aboard an international ocean drilling programme,
20 Expedition 339, looking very specifically at some deep-water targets and
21 understanding of the outer shelf and upper slope regions of the Gulf of Cádiz.
22

23 **MR AZNAR GÓMEZ:** Have you ever heard about Sage Maritime Scientific Research
24 Incorporated (Sage hereinafter) as a company that “has always been surveying and
25 producing oil and gas”, as it is said by, among others, Mr Foster in his affidavit
26 annexed as Annex 42 to the Applicant’s Memorial?
27

28 **MR STOW:** Before this case I had never heard of Sage at all. I asked several of my
29 colleagues in the petroleum engineering department and nobody had heard of Sage
30 before now.
31

32 **MR AZNAR GÓMEZ:** How could you describe the current hydrocarbon activities in
33 the Gulf of Cádiz and particularly in the Bay of Cádiz?
34

35 **MR STOW:** As far as I know, there has been no interest in the Bay of Cádiz in terms
36 of hydrocarbons, no interest in the very shallow waters or coastal areas. There is a
37 growing interest in deeper parts of the Gulf of Cádiz and there has been for a
38 number of years. Companies such as Repsol, Care and Energy BG Group have all
39 expressed an interest in exploration in deeper waters.
40

41 **MR AZNAR GÓMEZ:** It has been described that quite recently there have been
42 some methanogenic activities in the Gulf of Cádiz. Some have been reported by the
43 mass media in Spain, such as incorporated in Annex 46 to Saint Vincent and the
44 Grenadines’ Reply. Have you had an opportunity to come across this mass media
45 article?
46

47 **MR STOW:** I did not see the mass media article before these proceedings, but
48 I have known of the methanogenesis in the Gulf of Cádiz certainly.
49

1 **MR AZNAR GÓMEZ:** This mass media report – I am just structuring some of the
2 sentences – said that the *Viscount of Eza*, an oceanographic vessel, not any other
3 kind of vessel, was making this research in the outer edge of the continental shelf at
4 depths ranging between 100 and 800 metres, that is not in shallow waters, and that
5 the goal of that research was to know those areas and then propose them as areas
6 to be protected as a feature of Spanish marine reserves. Do you think that these
7 reported methanogenic activities somehow prove the suitability of the Gulf of Cádiz
8 to produce oil and gas in commercial terms?
9

10 **MR STOW:** They do not necessarily tell us anything about the commercial quantities
11 of oil or gas that might be available. They do not necessarily tell us anything about oil
12 and gas. Methane can be produced in two principal ways: one from the very shallow
13 degradation or decomposition of organic matter near the surface of the sediments;
14 this occurs everywhere in the ocean basins and sometimes the methane
15 accumulates more readily. The second way is that it can be produced very much
16 more deeply at one, two or three kilometres below the sea floor by thermal
17 processes, and this type of methane indicates that there is generation potential in the
18 Gulf. Certainly it is only in the deeper regions. The other thing that I would say in
19 relation to the methanogenesis is that it is being studied most principally for the
20 intriguing organic life that surrounds the methogenic vents. It is a very interesting and
21 different type of deep-water, if you like, coral reef, and that is the principal interest.
22

23 **MR AZNAR GÓMEZ:** That is why the main goal is to know these areas and to
24 propose them as marine protected areas?
25

26 **MR STOW:** Exactly.
27

28 **MR AZNAR GÓMEZ:** Mr Stow, under the last report published by the Corporation of
29 Strategic Reserves of Oil-based Products (CORES by its Spanish acronym), which
30 can be publicly consulted on the web page of CORES, the average Spanish
31 consumption of these oil-based products is about 400,000 GW hours. The main
32 source of these products in the Gulf of Cádiz, not the Bay of Cádiz, is the offshore
33 Poseidon platform. This installation, following this public data published by CORES,
34 has contributed to an average of only 0.25 per cent to Spain's oil-based consumption
35 in the past eight years. Would you agree with this general data?
36

37 **MR STOW:** Yes, that seems entirely reasonable.
38

39 **MR AZNAR GÓMEZ:** Do you know the average water depth where these offshore
40 installations are operating?
41

42 **MR STOW:** The general water depths are in excess of about 100 metres, as far as
43 I know. Certainly the exploration interest is generally deeper than that, down to 800
44 metres or more.
45

46 **MR AZNAR GÓMEZ:** Therefore, do you think that the conclusions of the report of
47 the *Instituto Español de Oceanografía*, annexed as Annex 5.2 to the Spanish
48 Counter-Memorial, is accurate with regard to the potential for the Bay of Cádiz to
49 contain accumulation of petroleum?
50

1 **MR STOW:** Yes. I looked at this very carefully, of course, and it seems absolutely
2 correct as far as I am concerned. The Bay and other coastal areas have very, very
3 low priority for any kind of exploration.
4

5 **MR AZNAR GÓMEZ:** On the screen now you can see a map of the targeted known
6 points where the *Louisa* and its so-called tender boat, the *Gemini III*, have allegedly
7 been gathering geological and geophysical data. From the point of view of geological
8 research and geophysical studies of marine hydrocarbons, are those points the most
9 probable location of possible hydrocarbons?
10

11 **MR STOW:** No, absolutely not. They are far too shallow and coastal, in my view.
12

13 **MR AZNAR GÓMEZ:** If you were the scientific director of an expedition in Spain
14 such as described by Saint Vincent and the Grenadines, would you recommend
15 those points in order to successfully look for hydrocarbons?
16

17 **MR STOW:** No, certainly not.
18

19 **MR AZNAR GÓMEZ:** Could you explain briefly what is meant by “magnetic
20 signature” in relation to oil and gas? Do these kinds of hydrocarbon have that
21 magnetic signature?
22

23 **MR STOW:** No. Oil and gas have no magnetic signature whatsoever. The only thing
24 that we use magnetics for in hydrocarbon exploration is at a very, very large scale of
25 hundreds or more square kilometres of area to establish the basic geology of the
26 region. Principally, we are looking for areas with very thick sedimentary
27 accumulations of mud, sand and silt. Magnetic properties in general can distinguish
28 thick accumulations of sediment from other types of rock, but they have nothing to do
29 with an oil and gas signature.
30

31 **MR AZNAR GÓMEZ:** Will you please now look at the screen? You will see a
32 magnetometer and an ROV metal detector, which appear in Annex 10 of the Spanish
33 written response in the phase of Provisional Measures in this case, which were
34 found aboard the *Louisa* and the *Gemini III*. Could you briefly describe the possible
35 use of a magnetometer in commercial oil and gas exploration and its use in
36 conjunction with ROV metal detectors, please?
37

38 **MR STOW:** There is absolutely no use for a metal detector, plain and simple, in oil
39 and gas exploration. With the magnetometer, the one that is shown is a very high
40 resolution magnetometer that principally is used for very, very shallow surveying,
41 “shallow” meaning near the sediment surface. All oil and gas is located very deep
42 within the sediment column – one, two, three or more kilometres – so that this kind of
43 magnetometer could not be used it that way.
44

45 **MR AZNAR GÓMEZ:** Last Saturday Mr McAfee, the Applicant’s expert in marine
46 hydrocarbons, told us that even a huge company would use a G-882 magnetometer.
47 However, regarding what you have just declared, we can conclude that any serious,
48 large hydrocarbons exploration company would never use such equipment, can we?
49

1 **MR STOW:** As I say, the only use of magnetic data would be at a first, very, very
2 large scale regional study of an area. In my experience, it is a different type of
3 magnetometer that is used, which penetrates deep within the surface and gives a
4 low resolution deeper. This is a very early stage of exploration and is normally
5 performed by service companies, and the data is made available on databases or for
6 sale, and if you wanted to look at the magnetics properties originally, you would
7 certainly interrogate databases to do that; you would not go out with a little
8 magnetometer.

9
10 **MR AZNAR GÓMEZ:** Would you then agree with the Neftco President, Mr McAfee,
11 when in his letter of 18 December 2003, which you can see on the screen,
12 reproduced as Annex 31 to Saint Vincent and the Grenadines' Memorial, he
13 recommended the use of this particular magnetometer because "[it] is an ultra-
14 sensitive/high sample rate marine magnetometer designed for shallow and deep oil
15 and gas survey applications"?

16
17 **MR STOW:** I do not understand that at all in terms of exploration. It seems to be
18 misguided and, as I say, a highly sensitive one looks only near the surface of the
19 sediment, not deeper. You might use that sort of instrument if you were looking for
20 cables or near-surface equipment that might interfere with siting an oil platform or
21 something like that, but we are very far from siting an oil platform in that area at the
22 moment, so I do not understand that at all.

23
24 **MR AZNAR GÓMEZ:** Let me turn again to the side scan sonar. During his
25 declaration as an expert last Saturday, Mr McAfee was asked about the side scan
26 sonar. I refer to the verbatim record, page 9, lines 24 and following, where he said:

27
28 The side scan sonar has a lot of work in the offshore business. The fact of
29 the matter is there have been lots of side scan sonars towed in the Gulf of
30 Cádiz to find the mud volcanoes. Often gas is spewing out of the area.
31 The side scan sonar can be used to find leaks. It forms a cloud in the
32 water. The escaping gas and oil forms a cloud in the water, and it is more
33 opaque than the water, and you get a return off of a side scan sonar. You
34 also can do ... This particular one does real good sub-bottom profiling,
35 which you can get sub-bottom profile, and of course, also it does pick up
36 manmade objects on the sea floor, which, knowing where those
37 manmade objects are, allows, when you post-process your magnetic
38 data, to take those into account so they do not give you bad information.
39 You remove those manmade objects from there.

40
41 Do you have any comment on that?

42
43 **MR STOW:** I have used side scan sonar extensively in my research. It is a very, very
44 useful technique for looking at again the very surface of the sea floor. As a marine
45 geoscientist, I am very interested in the processes that operate at the surface, the
46 currents that flow and so on. It does not look deep in the surface, below the surface,
47 so is not used for oil and gas exploration at all. The only way it might be able to see
48 the escape of hydrocarbons or gas is if that escape was more or less catastrophic,
49 such as in blow-outs in the deep sea or the BP disaster in the Gulf of Mexico, when
50 there would be a very steady stream of oil or gas escaping. That you could detect,
51 but certainly the very, very slow and gentle seepage of methane and associated

1 fluids from these mud volcanoes would not give a signature in the water column at
2 all. They could not be seen.

3
4 **MR AZNAR GÓMEZ:** Then do you think that in relation to exploration for oil and gas
5 in the Gulf of Cádiz, given the average depth, the instruments used by Sage are
6 useful and accurate?
7

8 **MR STOW:** No. Quite simply, I think that it would be a complete waste of time to use
9 those instruments for oil and gas.

10
11 **MR AZNAR GÓMEZ:** If you were the scientific director of an expedition such as that
12 allegedly performed by the *Louisa* and the *Gemini III* in Spain, would you
13 recommend the use of a magnetometer or side scan sonar?
14

15 **MR STOW:** No, not at all.

16
17 **MR AZNAR GÓMEZ:** And the use of hand-held metal detectors?
18

19 **MR STOW:** No, quite bizarre for oil and gas, certainly.
20

21 **MR AZNAR GÓMEZ:** Mr Stow, last Saturday the Applicant's expert on marine
22 hydrocarbon prospects, Mr McAfee, also stated that when he or his company looked
23 for oil and gas they did not really care what the geology was. I would like to read his
24 exact words in order not to misrepresent him. On page 13, line 29, of the verbatim
25 record his words were: "We look for oil. We do not look at geology, sir." I am not a
26 geologist of course – I am even worse – but would you agree with me that this is a
27 strange basis for exploring oil and gas?
28

29 **MR STOW:** If find it incredulous, I must say, and that is not only as a geoscientist
30 and a petroleum geologist, but, very simply, any exploration well, for example,
31 offshore these days, would cost at least \$100 million. Now you do not as any oil
32 company spend that sort of money without very, very serious interrogation of the
33 geology of the region, so I do not understand that.
34

35 **MR AZNAR GÓMEZ:** Another possibility, another methodology, described by
36 Mr McAfee during his expert testimony was fracking. His explanation was:
37

38 Basically, hydrocarbons are locked inside shale or rock and you can't get
39 communication to the well, and if you break it up into little pieces you get
40 communication and it allows the wells to breathe and give up their
41 hydrocarbons.
42

43 My distinguished colleague the Co-Agent of Saint Vincent and the Grenadines then
44 asked, "So you explode the rock formations and that is called fracking" and
45 Mr McAfee said, "Yes, that is correct".
46

47 In many countries surrounding Spain – for example, in France – so far as I know,
48 fracking is prohibited. What do you think about fracking as a methodology?
49

1 **MR STOW:** It is a method that has become more and more common, particularly in
2 the United States at the moment, for exploiting very, very tightly held gas and oil
3 within deeply-buried solid rocks, and it is a hydraulic method of indeed exploding or
4 fracturing the rocks deep underground. Again we are talking about one/two
5 kilometres depth below the surface.

6
7 It has never been done offshore at all; it is a much more complicated process and
8 would be much more expensive, and it is only a process for producing hydrocarbons
9 once you have found them, yes.

10
11 **MR AZNAR GÓMEZ:** In any case I think this is the rationale behind the legislation
12 that prohibits fracking and the environmental damage that it could create.

13
14 **MR STOW:** It is a big debate in many countries at the moment, whether it should be
15 allowed or not, and certainly in a number of European countries there is a
16 moratorium on fracking at all.

17
18 **MR AZNAR GÓMEZ:** Actually, last year this very Tribunal, in its advisory opinion,
19 did not talk about fracking, but described quite well the responsibilities of States
20 sponsoring deep-sea mining operations of the States, and the main rationale behind
21 the advisory opinion was the application of the precautionary principle to mining
22 activities in the deep seas. Dr Stow, if you were considering the possibility of
23 exploring a new area, what would you do first? Do you think that consulting the
24 national geological database is a common way of gathering free existing data
25 ?

26
27 **MR STOW:** Yes, this is very much the first step in any oil company. If you are
28 exploring a new area, you find as much data as you can. You fully interrogate all
29 public databases. You do as much background reading that has been published on
30 the area as possible. In addition to remote geophysical surveys there will be a large
31 amount of seismic data, which is one of the principal types of data set used, and you
32 would have a geological and a geophysical team to assess this collected data.

33
34 **MR AZNAR GÓMEZ:** On the screen you can see a picture taken from the technical
35 archives on hydrocarbons freely available in the Ministry of Industry, Energy and
36 Tourism of Spain, as the Tribunal already knows. Can you explain to this honourable
37 Tribunal the information collected or available in these archives, please?

38
39 **MR STOW:** Yes, this is a standard sort of archive that most nations with oil and gas
40 interests – and that is most nations in the world now – will collate and will make
41 available for industry to essentially attract industry to consider work or exploration
42 based in their country or in their territorial waters; so it is a normal process. In fact,
43 as a masters student of petroleum geoscientists and engineers, we often set them a
44 task of preliminary exploration of a basin that we name around the world – it could be
45 the Gulf of Cádiz or offshore UK. The first thing they would go to would be a national
46 database of this sort.

47
48 **MR AZNAR GÓMEZ:** Apart from the Infoterra network prepared and organized by
49 the United Nations Environmental Programme, which is a database of a huge
50 amount of satellite images in order to survey the state of the environment on the

1 protection – this is Infoterra of UNEP. Do you know an English company called
2 Infoterra?
3

4 **MR STOW:** I don't personally know of Infoterra, no.
5

6 **MR AZNAR GÓMEZ:** Mr President, may I ask, as a mild retaliation to my
7 distinguished colleagues of Saint Vincent and the Grenadines to put on the screen
8 the blue photograph of Infoterra, the blue one with the spots of the vessels and some
9 light blue oil seeps? Thank you.
10

11 This is, for the Applicant, an authoritative source of data for coming to Spanish
12 waters to prospect for oil and gas. If you see this photograph, what could you
13 interpret, as a specialist in marine oil and gas prospection?
14

15 **MR STOW:** It is difficult to say exactly as I don't have a precise location and scale,
16 but it looks as though we have got the Bay of Cádiz and various ships around. The
17 blue and the black will be oil slicks and pollutants in the water, I assume. This is very
18 much – I mean if you are thinking in terms of oil and gas, this is a surface view of the
19 oceans and is telling you simply about surface oil and gas, which will be entirely
20 pollutant-based.
21

22 **MR AZNAR GÓMEZ:** In your professional oil and gas prospecting experience, have
23 you ever seen the use of two abnormal deflectors as those installed in the stern of
24 the *Gemini III* that can be seen on the screen and is reproduced in photograph 1 of
25 Annex 16 of Spain's Memorial?
26

27 **MR STOW:** No, I do not think those are used at all. I know they are not used for oil
28 and gas exploration. As far as I understand they are used for removing sediment
29 from the surface.
30

31 **MR AZNAR GÓMEZ:** Would you recommend this methodology?
32

33 **MR STOW:** No, certainly not.
34

35 **MR AZNAR GÓMEZ:** Thank you, Professor. Do you think that the conclusions of the
36 report of the Instituto Español de Oceanografía, Annex 5.1 of the Spanish Counter-
37 Memorial, and the report of the Instituto Geológico y Minero de España, Annex 5.3 of
38 the Spanish Counter-Memorial, are accurate with regard to the suitability of the
39 vessels and the instruments for an oil and gas expedition as that alleged by Saint
40 Vincent and the Grenadines?
41

42 **MR STOW:** Yes. Again, I read both Annex 5.1 and 5.3 very carefully. I think they are
43 a very accurate and reasonable assessment. Certainly the equipment on board, the
44 areas surveyed are simply not appropriate for oil and gas exploration, so I fully
45 agree.
46

47 **MR AZNAR GÓMEZ:** What about the methodology described in these cases? Is it
48 the normal methodology used in marine hydrocarbons research?
49

50 **MR STOW:** Not at all, no.

1
2 **MR AZNAR GÓMEZ:** Have you had occasion to read the scientific article written by
3 De Baukelaer and others, published in 2003 by *Geo-Mar Letter*, pages 177-186 and
4 reproduced as Annex 35 of Saint Vincent and the Grenadines' Memorial?
5

6 **MR STOW:** I have now read it, yes.
7

8 **MR AZNAR GÓMEZ:** Do you think that the methodology, the instruments and the
9 use of personnel described in that article refer to a scientific survey similar to that
10 alleged by Saint Vincent and the Grenadines in the Bay of Cádiz?
11

12 **MR STOW:** No, as far as I could see it was a very interesting, but a very specific
13 case, particularly looking for gas seepage potentially from major gas hydrate
14 deposits. Now, these gas hydrates are fairly near-surface deposits that occur under
15 high pressures and cold temperatures, and therefore only occur in water depths in
16 excess of 500 metres and perhaps up to 800 or even 1,000 metres of water depth.
17 They have not yet been found, as far as I know, anywhere in the Gulf of Cádiz, but
18 they are known from many other continental margins around the world.
19

20 **MR AZNAR GÓMEZ:** Do you think that an expert in marine hydrocarbons should
21 have to be aboard the vessel, or at least close to the expedition during the main
22 data-gathering days?
23

24 **MR STOW:** Yes. It is a very complex set of data that is being gathered in oil
25 exploration and it needs significant interpretation by experts at the time, and with an
26 ongoing programme of exploration you need investigation and understanding in real-
27 time. That is usually carried out by experts on board a ship in consultation, often
28 direct consultation, with further experts at a laboratory on land.
29

30 **MR AZNAR GÓMEZ:** Thank you. During the cross-examination made by Spain of
31 the Applicant's witnesses and expert it was clearly demonstrated that there is no
32 single evidence about the presence of a marine oil and gas expert aboard the *Louisa*
33 or the *Gemini III* during the days that the vessels were sailing in Spanish waters. If
34 you were the scientific director of an expedition such as that described by Saint
35 Vincent and the Grenadines how would you be involved during the days of data-
36 gathering?
37

38 **MR STOW:** I would either be on board the vessel myself or I would have selected a
39 team of qualified experts to be on board in my place.
40

41 **MR AZNAR GÓMEZ:** Professor Stow, to the best of your knowledge and expertise,
42 with the data both Saint Vincent and the Grenadines and Spain have already
43 discussed in this case, do you think that the *Louisa*, the *Gemini III*, the equipment
44 and the personnel aboard and the methodology described and used were the most
45 appropriate to carry on a hydrocarbon survey in the Bay of Cádiz?
46

47 **MR STOW:** No. The answer is simply, no. There seems to be no reason for that
48 selection of equipment, the high-resolution magnetometers, the metal detectors, the
49 side-scan sonars – certainly not the divers from small ships working around the

1 coast. Neither the equipment nor the ships nor the areas where they were working,
2 as far as I can see, have any bearing on serious oil and gas exploration.

3
4 **MR AZNAR GÓMEZ:** Professor Stow, of course with the inherent limits implied in my
5 following question and your presence here as an expert before this Tribunal, and
6 given all the information you have on the activities described in this case, do you
7 think that the vessels and people represented here by Saint Vincent and the
8 Grenadines were exploring oil and gas in Spanish waters?

9
10 **MR STOW:** Quite frankly, no. It seems to me highly implausible.

11
12 **MR AZNAR GÓMEZ:** Thank you, Professor Stow, thank you, Mr President.

13
14 **THE PRESIDENT:** Thank you. Pursuant to article 80 of the rules of the Tribunal an
15 expert called by one Party may also be examined by the other Party. Therefore, I ask
16 the Co-Agent for Saint Vincent and the Grenadines whether the Applicant wishes to
17 cross-examine the expert. Mr Weiland?

18
19 **MR WEILAND:** Yes, sir.

20
21 **THE PRESIDENT:** You have the floor.

22
23 ***Cross-examined by MR WEILAND***

24
25 **MR WEILAND:** Mr Stow, is there a difference between surveying an offshore area to
26 determine the possibility of finding some hydrocarbons as opposed to exploration?
27 Are those not terms of art in your industry?

28
29 **MR STOW:** As far as I can see, surveying is one of the parts of exploration.

30
31 **MR WEILAND:** It is the very first part usually.

32
33 **MR STOW:** As I said before, the first part is data-gathering. You first of all gather a
34 lot of data from existing data sources, from national databanks, before you embark
35 on any actual survey.

36
37 **MR WEILAND:** I think you testified that use of the magnetometer in shallow water
38 would be reasonable if you were – especially if you were – doing a large-scale data-
39 gathering effort. Is that fair to say?

40
41 **MR STOW:** No, what I said was that magnetometers of low resolution would be used
42 over very, very large areas of either the sea floor or land, either towed behind a ship
43 over hundreds of kilometres of area, or flown by plane – but, in actual fact, I am sure
44 this data would exist in the national databank.

45
46 **MR WEILAND:** Well, if you did not have enough money to tow your devices around
47 hundreds of kilometres, that would still be a reasonable activity if you are trying to
48 map the sea bottom, at least in some parts of the area, would it not?

1 **MR STOW:** No, no, it does not work like that. If you do not have a lot of money, you
2 interrogate the free national databank; but, secondly, you would not in any way use –
3 target very small areas, which I see from the map were being targeted, with a
4 magnetic survey because the magnetic survey can only look at very large areas and
5 major rock differences.
6
7 **MR WEILAND:** What areas was Sage surveying?
8
9 **MR STOW:** They were surveying a series of – or looked from the map as though
10 they were surveying a series of small areas along the coast and close to the coast.
11
12 **MR WEILAND:** What was the dimension of those areas? What maps are you talking
13 about?
14
15 **MR STOW:** The map that was shown – I do not remember the number – that has
16 been shown in several of the views, and the areas are relatively small.
17
18 **MR WEILAND:** Views this morning?
19
20 **MR STOW:** Views this morning or in the documentation.
21
22 **MR WEILAND:** Mr President, would you ask them to put up the map that they call
23 "targeted parts by the vessels"?
24
25 **THE PRESIDENT:** Yes.
26
27 **MR WEILAND:** Do you recall this map? You saw it just a few minutes ago.
28
29 **MR STOW:** Yes, yes.
30
31 **MR WEILAND:** What are the dimensions? What does this map show? Did you see it
32 before you came in here this morning?
33
34 **MR STOW:** Yes, yes.
35
36 **MR WEILAND:** Okay, what is it?
37
38 **MR STOW:** It is the south coast of Spain, the Gulf of – the Bay of Cádiz and along
39 the coastal areas, and it is a series of small circular areas with, I assume, targeted
40 survey sites.
41
42 **MR WEILAND:** Targeted by whom?
43
44 **MR STOW:** By Sage?
45
46 **MR WEILAND:** Someone told you that?
47
48 **MR STOW:** I thought – well, it may well be, yes.
49
50 **MR WEILAND:** Who told you that these are the areas targeted by Sage?

1
2 **MR STOW:** You tell me what they are.
3
4 **MR WEILAND:** Well, sir, I am sorry, I get to ask the questions. That's the beauty of
5 this process that we are involved in.
6
7 **MR STOW:** But I tell you, you have to explain exactly what you are meaning. I mean,
8 you know, what are you wanting me to ---
9
10 **MR WEILAND:** You have come in here, sir, and testified with great confidence about
11 this map and I am asking you, who told you that this is where Sage went? You do
12 not remember?
13
14 **MR STOW:** The previous counsel.
15
16 **MR WEILAND:** The Spanish counsel?
17
18 **MR STOW:** Exactly.
19
20 **MR WEILAND:** What evidence did they show you that Sage had ever visited any of
21 these places?
22
23 **MR STOW:** I took that on trust. I thought this was an honest – I thought we had all
24 signed an oath to tell the truth.
25
26 **MR WEILAND:** Let me ask you this. You are a consultant. You are a marine
27 geologist, et cetera – correct?
28
29 **MR STOW:** Yes.
30
31 **MR WEILAND:** You have spent five years with BP.
32
33 **MR STOW:** I have spent five years with the British National Oil Corporation and then
34 with BP.
35
36 **MR WEILAND:** Then you retired to the university.
37
38 **MR STOW:** No, I did not retire; I have taken up a career in the university. I first of all
39 worked with the British National Oil Corporation; I then worked for the university; I
40 then worked for BP; I then worked in the university.
41
42 **MR WEILAND:** So you have been in the university now for how many years in a
43 row?
44
45 **MR STOW:** Since I was with BP last about ten years.
46
47 **MR WEILAND:** During that time did you make some discoveries of your own of
48 commercially viable oil and gas prospects?
49

1 **MR STOW:** We work very closely, and I have worked very closely, with the industry
2 as head of the Petroleum Engineering Department at the moment, in many, many
3 different phases of oil exploration and production, certainly as consultants, as
4 advisers, working on data and alongside industry personnel.

5
6 **MR WEILAND:** Actually that was not my question. Have you personally made
7 discoveries of commercially viable hydrocarbon production areas?

8
9 **MR STOW:** No, that is not my business.

10
11 **MR WEILAND:** Mr McAfee testified that he personally had found three fields and
12 managed 151 oil wells in his career, so would you at least grudgingly allow that
13 Mr McAfee might know something about the business?

14
15 **MR STOW:** Oh, absolutely, yes, yes.

16
17 **MR WEILAND:** I was a little confused by some of the testimony about having
18 scientists aboard because I thought in the very early phase of data-gathering, when,
19 for example, a small ship is towing a side-scan sonar around, that that is a job for,
20 like, technicians. You would not go and accompany a ship like that, would you, a
21 small boat when it is towing ---

22
23 **MR STOW:** If you are using side-scan sonar it is a very real-time piece of equipment
24 to look at what is going on on the sea floor at that time, but you want to interrogate
25 and to use to determine where you go next. If what you are talking about oil and gas
26 surveying where you have a marine geophysics ship that is towing the hydrophone
27 array – kilometres behind the ship – then that is an earlier phase where you need the
28 technical expertise on board but not the geoscientists at that stage.

29
30 **MR WEILAND:** And you need a computer to record what is coming off the
31 instrument – correct?

32
33 **MR STOW:** Yes, certainly.

34
35 **MR WEILAND:** Were you aware that after we – we being Sage in our ship – was out
36 towing these things, recording all this material on computers, that the Spanish then
37 kept the computers from February of 2006 until the present?

38
39 **MR STOW:** I did read that.

40
41 **MR WEILAND:** If you were on ship, how much would you charge the oil and gas
42 promoter to be on ship for, say, one day?

43
44 **MR STOW:** It is a very difficult question that. I have been on many ships, many
45 cruises, and certainly for most of them I am there as a scientist gathering data and I
46 do not charge. I am interested in the data.

47
48 **MR WEILAND:** But you do consultant work for oil companies, you testified.

49
50 **MR STOW:** Yes.

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MR WEILAND: I presume you are paid.

MR STOW: Yes.

MR WEILAND: So what would be your day rate for a consultant?

MR STOW: My day rate is about £1,500.

MR WEILAND: Pounds?

MR STOW: Yes.

MR WEILAND: And is that your rate for today?

MR STOW: I can't remember whether it is today or not, but I think this is inappropriate. Is it not inappropriate to ask these sorts of ---

MR WEILAND: I think we are entitled to know how much they are paying you to be here today. That is all I am asking.

THE PRESIDENT: Ms Escobar Hernández?

MS ESCOBAR HERNÁNDEZ (Interpretation from French): Mr President, can I object most strongly to this question? I believe that never has such a question been posed about how much a witness or an expert is receiving, irrespective of the party participating in the proceedings. This remains confidential within the delegation. Of course, at the appropriate time should the Tribunal wish to rule on costs, we will be very happy to submit all necessary information to the Tribunal, but when the appropriate moment comes and not during witness nor expert testimonies. I do regret having been obliged to intervene.

THE PRESIDENT: Madam Escobar, I also think that this question is not appropriate at this stage. Mr Weiland.

MR WEILAND: Thank you, Mr President. I am sorry. Perhaps we will leave that confidential information for another day.

You testified that the unsworn memoranda that were submitted by Spain as Annex 5 were all in accordance with your professional understanding of issues relating to oil exploration. Do you remember that testimony?

MR STOW: I specifically referred to Annex 5.1, Annex 5.2 and Annex 5.3, and certainly I believe those were very accurate and reasonable.

MR WEILAND: In Annex 5.1, among other things – I am paraphrasing it slightly – the author, who by the way is Dr Victor Diaz-del-Rio Español – do you know him?

MR STOW: Yes, yes.

1 **MR WEILAND:** Is he a friend of yours?
2
3 **MR STOW:** He is a professional acquaintance.
4
5 **MR WEILAND:** So he is a government employee – correct?
6
7 **MR STOW:** Maybe. I don't know.
8
9 **MR WEILAND:** So you do not know him well.
10
11 **MR STOW:** I would not know his employment status. I do not know the system in
12 Spain, which is different from the UK.
13
14 **MR WEILAND:** He says that the *Gemini III* has insufficient infrastructure to
15 accommodate deep-penetration seismic prospecting equipment. Do you recall that?
16
17 **MR STOW:** Yes.
18
19 **MR WEILAND:** Did you know that *Gemini III* had no seismic equipment at all? It was
20 not interested in seismic. It is doing just a first-tier survey.
21
22 **MR STOW:** Well, side-scan sonar is a seismic process.
23
24 **MR WEILAND:** So he concluded that the *Gemini III* was incapable of towing side-
25 scan sonar and you agree with that?
26
27 **MR STOW:** No, no, he said it was incapable of deep-penetration side-scan research,
28 seismic research. Side-scan sonar is very, very shallow penetration or surficial
29 seismic research and it could do that, and he recognized that, but that was not deep.
30
31 **MR WEILAND:** So side-scan sonar, good for shallow water.
32
33 **MR STOW:** No, good for no penetration or shallow – very shallow penetration, any
34 water depth.
35
36 **MR WEILAND:** It is showing you what is on the ---
37
38 **MR STOW:** Surface.
39
40 **MR WEILAND:** The surface of the sea floor.
41
42 **MR STOW:** Yes.
43
44 **MR WEILAND:** If it picked up some picture of something you were not sure what it
45 was – it might be one of these mud volcanoes you referred to – would it not be
46 appropriate to send a diver down to explore that in some instances?
47
48 **MR STOW:** It depends entirely what you are doing. Divers would not be used in any
49 kind of oil exploration.
50

1 **MR WEILAND:** Not in any kind?
2
3 **MR STOW:** No.
4
5 **MR WEILAND:** You have never had a diver go down in shallow water and check the
6 anomalies on the sea floor?
7
8 **MR STOW:** No. They will be there certainly for – once you have established an
9 installation, a platform or a rig; then divers go down very regularly to check that that
10 is working or if you have an installation on the sea floor such as a pipe producing
11 from a field, then divers are used routinely where it is shallow enough for divers. If it
12 is deeper you will use a remotely operated vehicle, a POV; but this is entirely for
13 checking sub-surface installation and structure, not at the survey stage.
14
15 **MR WEILAND:** Is a mud volcano something that might have a good prospect for
16 development?
17
18 **MR STOW:** No.
19
20 **MR WEILAND:** I thought you said they sometimes leak methane.
21
22 **MR STOW:** Exactly. For production, you do not want anything leaking.
23
24 **MR WEILAND:** Pardon?
25
26 **MR STOW:** For production of hydrocarbons or for finding a hydrocarbon trap, it must
27 not leak. The whole of the oil industry is to look for something that is capped and
28 sealed and does not leak. So you would avoid anything to do with a vent site such as
29 a mud volcano.
30
31 **MR WEILAND:** You certainly would avoid any such underwater structure that might
32 turn out to have metal in it – correct?
33
34 **MR STOW:** Metal is irrelevant.
35
36 **MR WEILAND:** It would not be irrelevant to someone who was interested in
37 developing some anomaly that is on the sea floor, would it? You are not going to try
38 to drill into some kind of cable that is lying on the sea floor or piece of wreck from a
39 merchant ship that sank 25 years ago.
40
41 **MR STOW:** Absolutely, but the thing is that that is at a very, very different stage. If
42 you have discovered what you think is a potential field, you will apply to the
43 government to be able to license the block – well, you have licensed the block to be
44 able to develop, and if you were granted a licence to develop a field, and this would
45 be many, many years after exploration, you would then of course survey the sea
46 floor.
47
48 **MR WEILAND:** Do you have evidence that no person related to Sage accessed this
49 Spanish website that we have heard so much about?
50

1 **MR STOW:** I have not looked into this matter.
2
3 **MR WEILAND:** The only other thing I am going to ask you about is this notion that
4 exploring close to the coastline in the Gulf of Cádiz – by the way, do you know where
5 the Gulf starts and the Bay stops? We have had a lot of confusion about that. I think
6 you yourself have distinguished between the Bay and the Gulf, so where is the line
7 drawn?
8
9 **MR STOW:** Do you want me to show you on a map?
10
11 **MR WEILAND:** Is there some way you could just describe it?
12
13 **MR STOW:** There is not an easy way to describe. I can point very clearly on a map
14 where the Bay is and where the Gulf is, but the Bay is a very close to coastal region,
15 the Gulf is the whole area between southern Iberia and northern Africa, which is a
16 very large area.
17
18 **MR WEILAND:** Do you know where the Poseidon field is?
19
20 **MR STOW:** Yes.
21
22 **MR WEILAND:** That is in the Gulf of Cádiz – correct?
23
24 **MR STOW:** Yes.
25
26 **MR WEILAND:** Does the Bay of Cádiz extend up to the area off the coast of Huelva?
27
28 **MR STOW:** No.
29
30 **MR WEILAND:** You said that in your professional opinion it is impossible for anyone
31 to think that you could discover hydrocarbons in the area close to Cádiz. Is that
32 correct or am I misunderstanding?
33
34 **MR STOW:** No, you are misquoting. I said it would be a very, very low priority
35 exploration target.
36
37 **MR WEILAND:** Low priority?
38
39 **MR STOW:** Very low priority.
40
41 **MR WEILAND:** So the big oil companies would certainly stay away from that, in your
42 opinion?
43
44 **MR STOW:** I would have thought any oil company would.
45
46 **MR WEILAND:** Have you heard of this Calypso concession that Spain granted? We
47 saw it yesterday.
48
49 **MR STOW:** I am not familiar, no.
50

1 **MR WEILAND:** Did they happen to mention to you that they had been issuing
2 permits for exploration right off the city of Cádiz that extended right up to the
3 breaker?
4

5 **MR STOW:** Continental shelf?
6

7 **MR WEILAND:** Right up to the edge of the city. Permits to explore. Who is Calypso?
8

9 **MR STOW:** I certainly saw on one of the maps a large exploration area that in my
10 view extended to the outer shelf edge and just beyond, which would have been from,
11 in my estimation – although it did not have bathymetric contours, my estimation
12 would have been that it was from about 200 metres to the coastal region, yes. That
13 broad area, I would have thought that is a possible place to look.
14

15 **MR WEILAND:** So within 200 metres?
16

17 **MR STOW:** No, 200 metres water depth, which is the outer continental shelf/upper
18 continental slope region.
19

20 **MR WEILAND:** No, I am talking about not the western limit of the permit that was
21 granted to Calypso; I am talking about the eastern limit.
22

23 **MR STOW:** Yes, yes.
24

25 **MR WEILAND:** Did you look at that?
26

27 **MR STOW:** I did not see ... Again, there was no bathymetry on the contours, so I am
28 not sure what the water depth was there.
29

30 **MR WEILAND:** Nothing further, Mr President.
31

32 **THE PRESIDENT:** Thank you, Mr Weiland. An expert who was cross-examined by
33 the other Party may be re-examined by the Party who had called the expert.
34 Therefore, I ask the Agent of Spain whether the Respondent wishes to re-examine
35 the expert.
36

37 **MS ESCOBAR HERNÁNDEZ** (*Interpretation from French*): No, thank you, Mr
38 President. It is not our intention to re-examine the expert witness. However, could I
39 ask for permission to show a map, which has already been screened here in the
40 Tribunal? It refers to the Calypso. This is simply for the Tribunal's information, if I
41 have your permission to do so.
42

43 **THE PRESIDENT:** Please proceed.
44

45 ***Re-examined by MR AZNAR GÓMEZ***

46

47 **MR AZNAR GÓMEZ:** Thank you, Mr President. This is not a very good map, not a
48 high-scale map, but you do recognize the Bay of Cádiz?
49

50 **MR STOW:** Yes.

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MR AZNAR GÓMEZ: Do you see the eastern corner of the Calypso in yellow?

MR STOW: Yes, yes.

MR AZNAR GÓMEZ: It could be said that this is just on the limit of the drawing of the straight line which closes this Bay?

MR STOW: Yes.

MR AZNAR GÓMEZ: Thank you, Mr Stow. Thank you, Mr President.

THE PRESIDENT: I thank Mr Aznar Gómez. Mr Stow, thank you very much for your testimony. Your examination is now finished so you may withdraw.

I would like to ask Ms Escobar Hernández, since we have 25 minutes left before the morning break, I would like to know how you would like to proceed.

MS ESCOBAR HERNÁNDEZ (*Interpretation from French*): Thank you, Mr President. If it suits you, we would like to call James Delgado, another expert, who is already with us. I think we could put the remaining 25 minutes before the break to good advantage. If that is agreeable, I would request that you call the witness. Once again, it will be my colleague, Mr Aznar Gómez, who will be asking the questions.

THE PRESIDENT: Thank you very much. Before we continue with the examination of the next expert, there is a further procedural issue that we need to attend to. As I mentioned yesterday, several experts called by Spain during the course of these proceedings will make their statements in Spanish. Since Spanish is not one of the official languages of the Tribunal, it is incumbent upon Spain to provide interpretation from Spanish into one of the Tribunal's official languages. Interpreters provided by a Party need to make a solemn declaration, and in fact, one interpreter made such declaration yesterday. Spain has informed us that, in view of the amount of interpretation needed, they wish to provide a further interpreter, Mr Hernando Barrios, who I welcome to the Tribunal.

MS ESCOBAR HERNÁNDEZ (*Interpretation from French*): Mr President, if I may, I do not wish to confuse matters but Mr Delgado will be speaking English. There is no need for an interpreter. He speaks English, he is a US citizen.

THE PRESIDENT: Thank you, Ms Escobar Hernández. Mr Barrios is there. This is for the next expert. May I call now upon the Registrar to administer the solemn declaration which Mr Barros has to make.

THE REGISTRAR: Thank you, Mr President. Good morning, Mr Barrios. Interpreters provided by one of the Parties are required to make the solemn declaration under article 85 of the Rules of the Tribunal before entering upon their duties. You have been provided with the text of the declaration. May I therefore invite you, Mr Barrios, to make the solemn declaration.

The interpreter, MR HERNANDO BARRIOS, made the solemn declaration

1
2 **THE PRESIDENT:** I now give the floor to Ms Escobar Hernández to continue.

3
4 **MS ESCOBAR HERNÁNDEZ** (*Interpretation from French*): Thank you, Mr President.
5 I request James Delgado be called to continue the submissions from experts, and
6 also that you allow my colleague, Mr Aznar Gómez to examine him.

7
8 **THE PRESIDENT:** Thank you very much. Mr Delgado has arrived. The Tribunal will
9 proceed to hear the expert, Mr Delgado. I call upon the Registrar to administer the
10 solemn declaration to be made by the expert.

11
12 **THE REGISTRAR:** Mr Delgado, pursuant to the rules of the Tribunal, before giving
13 any statement, an expert must make the solemn declaration provided for under
14 article 79 of the rules. You have the declaration in front of you. May I invite you now
15 to make the solemn declaration.

16
17 ***The witness, MR JAMES PRESTON DELGADO, made the solemn declaration***

18
19 **THE PRESIDENT:** Thank you. Before we start with the examination of the expert,
20 may I remind the Parties, and you, Mr Delgado, to speak slowly to facilitate the work
21 of the interpreters and the verbatim reporters. I now give the floor again to Mr Aznar
22 Gómez to start the examination of the expert.

23
24 ***Examined by MR AZNAR GÓMEZ***

25
26 **MR AZNAR GÓMEZ:** Thank you, Mr President. Good morning, Mr Delgado. Could
27 you please say your complete name, address and current affiliation.

28
29 **MR DELGADO:** My name is James Preston Delgado. I reside at 218 Dale Drive in
30 Silver Spring, Maryland, in the United States. I currently hold the position of Director
31 of Maritime Heritage in the Office of National Marine Sanctuaries in the National
32 Oceanic and Atmospheric Administration in the United States Department of
33 Commerce. I am not, however, here today in my official capacity.

34
35 **MR AZNAR GÓMEZ:** Thank you, Mr Delgado. Yes, Spain wants to underline that
36 Mr Delgado is here as a professional and reputable archaeologist, and a professor,
37 and that he is acting in his individual capacity, not representing the Government of
38 the United States of America. Mr Delgado, could you please summarise your
39 experience, national and international, in relation to underwater archaeological
40 research.

41
42 **MR DELGADO:** I have been engaged in the practice of maritime and underwater
43 archaeology since 1978. I hold three degrees in Maritime History, with a PhD,
44 doctorate, in archaeology. My work has involved a variety of projects
45 archaeologically, which have ranged from smaller projects to large projects. The
46 largest project I have most recently worked on has been the scientific mapping of the
47 wreck site of the *Titanic* in the North Atlantic. That project is ongoing.

48
49 My field work has involved work not only in the United States and in several of the
50 states of the United States, such as Texas, California, Oregon, Massachusetts,

1 Florida and others, but also in other countries. I have worked in Japan, Chile, Cuba,
2 Panama, Spain, Germany, Greenland, Canada, the Republic of the Marshall Islands
3 and others. My project work has included initial research, surveys, documentation,
4 excavation, post-excavation analysis and the publication of results from
5 archaeological projects. In my professional capacity I have published a variety of
6 books, some of them through university presses with a peer-reviewed jury process,
7 on the results of my archaeological work. In addition, I have authored a number of
8 reports and articles, again in peer-reviewed scientific publications. It is very important
9 in my field to follow your field work with publication of the results, and the analysis
10 also speaks to the need to share what you learn.

11
12 In addition to this work, I have also actively been engaged in the protection of sites
13 as an archaeological administrator, both in my previous position with the United
14 States Government, with the United States Department of Interior's National Park
15 Service and as well in my current position. I have worked as a museum director, and
16 I have also served in all of these positions on a variety of professional organizations,
17 as well as scientific organizations. This has included tenure as a member for Canada
18 before UNESCO's International Commission on Monuments and Sites on their
19 International Committee on the Underwater Cultural Heritage. I currently also serve
20 on the Site Protection Committee of the Archaeological Institute of America.

21
22 In my capacity as an archaeologist, I have also worked to share the results of my
23 studies and projects with the public. This has involved other publications, books for a
24 more public audience, on maritime history and archaeology, as well as articles, and I
25 also spent the years between 2001-2007 as the host of an international television
26 production for *National Geographic* called *The Sea Hunters*, in which we visited
27 projects and shared those results with an audience in 172 international jurisdictions.

28
29 **MR AZNAR GÓMEZ:** That is all? (*Laughter*) Excuse me, Mr President. In the next
30 days you will be receiving a medal in Toronto for your longstanding career as an
31 archaeologist. Is that true?

32
33 **MR DELGADO:** Yes, I am receiving the Vilhjalmur Stefansson Award for exploration,
34 archaeology and mentoring in archaeology from my colleagues in Canada.

35
36 **MR AZNAR GÓMEZ:** Thank you, Mr Delgado. You have said, among other things,
37 that, among other countries, you have an archaeological experience in Germany, in
38 Japan, in Canada, in the United States and in Spain. I guess that to organize an
39 underwater archaeological project in those countries you need to fully comply with
40 their domestic legislation. Do you think that the legal conditions Spain imposed on
41 your projects were similar or equivalent to those imposed by the US authorities, the
42 German authorities, the Japanese authorities, or the Canadian authorities, for
43 example?

44
45 **MR DELGADO:** I do feel and know that the requirements of Spain were the same,
46 with minor differences, as any other country that I have worked in. I should note that
47 for five years I served with the Institute of Nautical Archaeology, which is an
48 international non-governmental organization which conducts work around the world.
49 It was founded by George Bass, who is considered the father of underwater or
50 nautical archaeology, in Turkey more than 50 years ago. INA, as it is known, works

1 internationally and, as its President, I was very familiar, not only with international
2 law but also the specifics of the various countries in which we worked. My knowledge
3 therefore was specific in regards to permit obligations as well as requirements and
4 domestic law. There simply is no basic difference.

5
6 **MR AZNAR GÓMEZ:** The particular legislation of the Texas state?
7

8 **MR DELGADO:** Texas is one of the most stringent states in the United States when
9 it comes to the protection of underwater cultural heritage. This was the result of
10 actions taken back in the previous decades, particularly the 1960s and the 1970s,
11 when shipwrecks and other underwater cultural heritage were being disturbed by
12 people who had no real interest in archaeology, and Texas enacted stronger
13 legislation to protect sites as a result.
14

15 **MR AZNAR GÓMEZ:** Having said that, why do you think that other legislation, like
16 Chinese, French legislation, or, for example, some African countries that now are
17 developing a complete array of protective legislation with the assistance of
18 UNESCO – why do you think that this legislation is so cautious in particular with
19 underwater cultural heritage?
20

21 **MR DELGADO:** There has been a growing sense in the last five decades of the
22 exceptional significance and the fragility of underwater cultural heritage. The work
23 done by George Bass, starting in Turkey and expanding through the Mediterranean,
24 now encompasses the globe, and that is significant because, with 72 per cent of the
25 world covered by water, one could argue successfully that the greatest record of
26 humanity's activities, the means by which we have traded, not only commerce but
27 ideas and even DNA, the means by which we have expanded into a more global
28 culture, has come because of the unifying influence of the sea, and in many ways
29 the clever ability of our species to adapt to this water environment, from the earliest
30 humans, who we now feel did navigate by water to populate areas such as Australia,
31 the spread of various native groups throughout the Caribbean, throughout Oceania,
32 to the more modern activities of the last five centuries, which have created the world
33 in which we now live, all of that is represented by what lies at the bottom of the seas,
34 lakes and rivers.
35

36 Because of the environmental circumstances of burial in the deep sea, one might
37 presume that things might just simply disappear because of that environment, but
38 what we have found is that that is not the case. Shipwrecks in particular, as well as
39 buried harbour sites, towns, that have been inundated as a result of sea level
40 change, evidence exceptional levels of preservation. Off the coast of Spain, in the
41 excavation of this one site, was a 2,700 year old Phoenician shipwreck, at a site
42 called Bajo de la Campana off of Cartagena, where we found sacks of preserved
43 pistachios, remains of other organic materials, and this is not unique; you find this in
44 many sites and in many contexts. We even find the well-preserved remains of ships
45 that otherwise would not be documented from the seafaring craft of antiquity to more
46 modern vessels. In the very cafeteria down on the ground floor of this building is a
47 model of the Cyrenean ship excavated off the coast of Cyprus, a classic Greek
48 merchant vessel of antiquity whose form was basically unknown until that excavation
49 raised pieces of that hull, which at the time of their recovery had the basic
50 constitution or structure of a piece of soft cheese, which required extensive work in

1 laboratories to make it capable of handling and reconstruction into not only the
2 model but the preserved remains of the ship.

3
4 That fragility is what drives the importance of legislation and the need to protect
5 these sites because, if not done carefully, without adequate resources or due care or
6 diligence, or a scientific report, you are destroying priceless evidence of human
7 activity that exists in perhaps the greatest museum of the world.

8
9 **MR AZNAR GÓMEZ:** So it could be said that an enormous part of the explanation of
10 our shared history is beneath the waters.

11
12 **MR DELGADO:** Yes.

13
14 **MR AZNAR GÓMEZ:** In these millions of books to be written about our history, how
15 could you describe the archaeological importance of the Gulf, and particularly the
16 Bay of Cádiz?

17
18 **MR DELGADO:** In regards to the Gulf and the Bay of Cádiz, you are dealing with
19 one of the most archaeologically significant and sensitive zones in the world. This is
20 an area which has been known to have been colonized and the source of trade and
21 activity since prehistoric times. In the classical period it was actively visited and
22 traded, and had establishments created by Phoenicians, Greeks, Romans, the
23 Arabic peoples who came, the subsequent great powers of Europe – all of this has
24 left a very rich, detailed record in terms of underwater cultural heritage. It includes
25 the remains of ports; of discarded, broken cargoes, when a voyage ended badly at
26 its destination; it includes shipwrecks of different periods. In this, what you have then
27 is a collection which some have estimated to be as many as thousands of
28 shipwrecks in the Gulf and the Bay of Cádiz, from deep water to the shallower
29 waters close to shore.

30
31 That heritage has been catalogued to some extent. The Institute of Nautical
32 Archaeology in 1984, working with and for the Government of Spain and the Ministry
33 of Culture, catalogued some 400 shipwrecks of considerable significance in the Bay
34 of Cádiz. That included areas of five clusters where significant actions had resulted
35 where larger groups of shipwrecks were located. The sites are seen to be important
36 not only because they represent this long history but, in particular, they also
37 represent the role of Spain as a leading maritime and naval power at the time of the
38 opening of the New World and subsequent events, and in particular, from the 16th to
39 the 19th centuries, you have a larger number of shipwrecks which reflect not only
40 Spain's activities but its interactions with other powers. You have represented there,
41 in addition to the range both in terms of time and types of ships and activities, what
42 some have argued to be exceptional levels of preservation due to burial in harbour
43 mud, and this has been asserted not only by archaeologists but by treasure hunters.
44 Nigel Pickford, a British authority, has catalogued some 34 shipwrecks he says are
45 of great importance in the Bay of Cádiz. His criterion, however, is the value or type of
46 cargo. Robert Marx, another treasure hunter, calls the Bay of Cádiz the world's great
47 archaeological treasure, primarily focusing on the levels of preservation, the wide
48 range of ships and, again, the amount of money he feels could be made from
49 shipwrecks in this area. Most recently in September 2010 in the Andalucian
50 newspapers it was reported by those newspapers that €100 million worth of treasure

1 was estimated to lie in the Bay of Cádiz. I do not know if that figure is accurate, but
2 what I can say is that if the Bay of Cádiz is a bank, then the great treasure that lies at
3 the bottom of it is in terms of human knowledge, not money.
4

5 **THE PRESIDENT:** Mr Aznar Gómez, I am sorry to interrupt you. I understand you
6 have many more questions to ask. We have reached 11.30 so the Tribunal will
7 withdraw for a break of 30 minutes. We will continue the hearing at noon.
8

9 **(Break from 11.30 a.m. to noon)**
10

11 **THE PRESIDENT:** We continue the hearing. Mr Aznar Gómez, you have the floor.
12

13 **MR AZNAR GÓMEZ:** Thank you, Mr President.
14

15 Now that we know the objective importance of underwater cultural heritage for the
16 explanation of the history of humankind and the objective or relative importance of
17 the Gulf of Cádiz and this province, may I ask you whether you have any experience
18 of this archaeological research in the Bay and the Gulf of Cádiz, please?
19

20 **MR DELGADO:** As previously noted, while the Institute of Nautical Archaeology,
21 which I have headed, did have explicit experience in the Bay of Cádiz, I personally
22 have not, but I have worked in the Gulf of Cádiz in particular examining the data, the
23 photomosaics, the photographs, video and other data recovered during the
24 examination and subsequent recovery of materials from a shipwreck in international
25 waters at one kilometre of depth, which, though analysis, I was able to determine
26 was the Spanish navy frigate *Nuestra Señora de las Mercedes*, which was sunk in
27 combat with British forces in October 1804. That examination was done as part of
28 litigation and my identification and archaeological analysis was upheld at every
29 subsequent level of legal review up to the United States Supreme Court.
30

31 **MR AZNAR GÓMEZ:** But the Bay of Cádiz is generally perfectly well known for
32 archaeologists in different oceans around the world?
33

34 **MR DELGADO:** I would say that the Bay of Cádiz is well known not only to
35 archaeologists but to anyone who is a student of the history of underwater
36 archaeology or who has an interest in treasure.
37

38 **MR AZNAR GÓMEZ:** So treasure hunters too. Have you had any experience with
39 underwater treasure hunters both in Spanish waters and elsewhere?
40

41 **MR DELGADO:** I have extensive experience with treasure hunters, though
42 not working for them or with them. The case in Spain in particular involved the
43 recovery of materials from the *Nuestra Señora de las Mercedes* by a US-based
44 commercial firm that recovers treasure by the name of Odyssey Marine. In the
45 United States I have dealt with treasure hunters both at a more amateur level to
46 those which have larger companies, in part through my previous experience working
47 with the US Department of the Interior National Parks Service, with the review of
48 applications, and in assessing work for damage done by treasure hunters in different
49 sites. I also was asked at the time of the passage of the United States domestic law
50 on underwater cultural heritage, the Abandoned Shipwreck Act, to be one of two

1 authors of guidelines issued by the government for the various states to administer
2 underwater cultural heritage. The charge from the Congress was very clear: all
3 values and all interested parties needed to be consulted and considered. So, in that
4 vein, I journeyed to various meetings, held public hearings, met with treasure
5 hunters, oversaw what was the party to whom treasure hunters expressed their
6 views of the law and what they thought might be workable in a public meeting in
7 Florida, visited Florida treasure hunter Mel Fisher in Key West, Florida, in his
8 operation, and also personally inspected a treasure hunting operation in progress at
9 the site of a British warship known as HMS DeBraak which was lost off the coast of
10 Delaware, in Delaware Bay. So I am familiar with treasure hunters both on a
11 theoretical and a practical basis, including business methods, equipment, techniques
12 and approach.

13
14 **MR AZNAR GÓMEZ:** Mr Delgado, have you ever heard about Mr Luis Valero de
15 Bernabé and Mr Claudio Bonifacio? Do you also know Mr Walter Cardona Bonet?
16

17 **MR DELGADO:** I do not personally know those three gentlemen but I know of them.
18 I have seen posts from Mr Bonifacio, for example, on the internet in treasure hunting
19 forums. He has published a book on Spanish shipwrecks and their value as treasure.
20 Mr Bonet has published a book as well on shipwrecks and their value. All of them are
21 known to me through reading.
22

23 **MR AZNAR GÓMEZ:** Should you be interested to perform archaeological research
24 in Spain, for example, would you contract Mr Valero and Mr Bonifacio as reputable
25 persons in underwater archaeological research?
26

27 **MR DELGADO:** I would not. From what I have observed and read in professional
28 reviews by colleagues, their interests are not the same as mine, which are
29 academically and scientifically focused, not commercial. In such a case, if I was to
30 work in Spain, I would work closely in particular with the Spanish Government, as we
31 did in Cartagena on the Phoenician shipwreck site.
32

33 **MR AZNAR GÓMEZ:** Mr Delgado, will you look at the map on the screen. This map,
34 which appears as Annex 4 of the Counter-Memorial of Spain, shows the different
35 targeted points by the vessels *Louisa* and *Gemini III*. Some of them are within the
36 so-called permit areas but most of them are outside the permit areas. Are the areas
37 marked by these points and those surrounding these points well known areas for
38 archaeological research?
39

40 **MR DELGADO:** Frankly, my first impression was that this was a map of shipwreck
41 locations in and around the Bay of Cádiz. These points are all areas identified by the
42 INA survey and others as particular zones of concentration of shipwrecks, but the
43 entire Bay of Cádiz is archaeologically sensitive, and as of 2009 had actively been
44 designated so, but again is a very sensitive area.
45

46 **MR AZNAR GÓMEZ:** On the next screen, overlapping the previous map, there are
47 marked some well known wreckage areas of several fleets, vessels and other human
48 remains in different moments of modern Spanish, European and also global history.
49 Could you please identify and briefly underline their archaeological importance, and
50 particularly that of the *Marcos del Puerto* fleet in the naval combat of 1656?

1
2 **MR DELGADO:** All the referenced sites or areas reflect a period on which
3 archaeologically we do not have as much information as we should. This period,
4 which corresponds closely to an active period in Spain's history as a dominant power
5 and as a power engaged actively in trade and commerce with Asia and with the then
6 Spanish colonies in South and North America, is a period that is seen by many
7 treasure hunters to be the ideal type of shipwreck to go after, because in their
8 estimation – and I have seen this noted in their treasure hunting blogs and their other
9 communications – Spanish ship equals treasure ship. I could therefore see why one
10 might have an interest for financial reasons, but archaeologically, for me, this
11 represents a period in which the world we know is forming. This is a period of the
12 rise of a global economy. This is the beginning of a more global culture. Despite
13 differences, this is a period into which Europe in particular is expanding and drawing
14 upon resources from other parts of the world with immense consequences for the
15 world, both positive and negative, and all of that would be reflected in the shipwrecks
16 that you see down there.

17
18 In particular, let us just talk about the *Marcos del Puerto* squadron, which was lost in
19 battle with an English fleet in 1656. This occurred during a six-year conflict known as
20 the Anglo-Spanish war from 1654 to 1660. The English decided to intercept a
21 squadron carrying money and did so right off of Cádiz, engaging the squadron,
22 which was placed under the command of the *Marcos del Puerto*. In the action that
23 followed, two ships out of the six escaped because they were driven ashore, two
24 were captured, and two were sunk. What you have as a result is not only the
25 archaeological remains of a battle but two ships in particular which, in essence by
26 sinking and settling down into the seabed, despite whatever damage may have
27 happened in the battle, whatever may have happened subsequently in terms of
28 ongoing environmental change, represent a near time capsule that reflects not only
29 those ships and the people on board but in particular where Spain was
30 technologically and economically at that period.

31
32 **MR AZNAR GÓMEZ:** Based on your expertise, it is well known that both the
33 *Almiranta* of that fleet – the galleon *San Francisco Javier* – and another targeted
34 wreck, the *Fama Volante* were loaded with important amounts of silver bars and gold
35 coins?

36
37 **MR DELGADO:** It is well known. It has been published in particular in Nigel
38 Pickford's book on treasures and shipwrecks and in others, and it is also available to
39 anyone who does even a rudimentary level of research. The *San Francisco Javier*,
40 for example, according to one treasure hunter's account, was said to have 600,000
41 pieces of eight, as they termed it, on board, as well as gold.

42
43 **MR AZNAR GÓMEZ:** Do you think that it is quite easy to gain access to information
44 referring to these wreckage areas and their approximate location?

45
46 **MR DELGADO:** It is very easy to gain an approximate location as well as the history
47 of these wrecks. The story of these various battles, the story of the activities, has
48 been written, and in particular the INA project of 1984 became a master's thesis by
49 student Denise Lakey in 1987. That study, cataloguing some 400 wrecks and areas

1 of significance, is available as an open-access, downloadable PDF file at Texas
2 A&M University, which is the home of the Institute of Nautical Archaeology.

3
4 **MR AZNAR GÓMEZ:** Could you please now describe the possible use of a
5 magnetometer in looting underwater cultural heritage and its use in conjunction with
6 ROV metal detectors such as those that you can see on the screen and appear in
7 Annex 10 of the Spanish written response in the phase of Provisional Measures in
8 this case, which were found aboard the *Louisa* and the *Gemini III*?

9
10 **MR DELGADO:** I am familiar with both. I have used both, as have my colleagues.
11 The geometric G-882 is an exceptional instrument for locating underwater cultural
12 heritage even with wooden shipwrecks, because it detects variations in the magnetic
13 field caused by metallic objects such as cannons, anchors, cannonballs, iron ballast
14 and things of that sort. The metal detector on the remotely-operated vehicle is more
15 of a proximity instrument, but it is also invaluable in locating materials, and that is
16 important in characterizing an underwater site, because a magnetic signature is a
17 clear indication, when you are in an area where you have a distinct pattern, of a
18 shipwreck, and my colleagues have been very skilled in characterizing and mapping
19 a shipwreck site, for example, using this instrumentation prior to excavation.

20
21 **MR AZNAR GÓMEZ:** Could it then be said that the G-882 cesium magnetometer
22 such as that used aboard the vessels the *Louisa* and the *Gemini III* is particularly
23 accurate for the identification of archaeological remains in shallow waters, given its
24 high resolution results particularly in relation to metallic remains such as silver, gold,
25 lead?

26
27 **MR DELGADO:** I am not a detailed expert in remote-sensing technology. I have only
28 been the chief scientist working on expeditions where this has been deployed. What
29 the technicians, some of them with PhDs in this technology, have said to me is that it
30 is a very accurate instrument, that the cesium magnetometer in particular is a highly
31 effective magnetometer as opposed to its predecessor, the proton precession
32 magnetometer, and I have seen that borne out in the results of our own surveys. In
33 particular, a recent magnetometer survey off the coast of Texas was done to
34 characterize an iron-hull shipwreck buried in sand for the most part – a US navy ship
35 sunk in combat. We looked carefully at the magnetometer data and what it
36 suggested in terms of what lay beneath and then verified that most recently, thanks
37 to hurricane and other storm erosion that exposed portions of the vessel's iron hull
38 and machinery, and in each case where there was a precise magnetic target we
39 found very distinct remains that we could characterize as the paddle wheels, the
40 mounts for guns, for example.

41
42 **MR AZNAR GÓMEZ:** In your experience of treasure hunters, do they normally use
43 these kinds of magnetometers and side scan sonar, if available?

44
45 **MR DELGADO:** Absolutely.

46
47 **MR AZNAR GÓMEZ:** In your experience of treasure hunters, do they normally use
48 hand-held metal detectors such as those shown on the screen and found aboard the
49 *Louisa* and the *Gemini III*, reproduced in photograph 5 of Annex 10 of Spain's written
50 response in the phase of Provisional Measures?

1
2 **MR DELGADO:** Yes, they do. That is a large number of hand-held metal detectors.
3 On our projects we use them very carefully to characterize in a magnetometer zone
4 where distinct smaller materials might be located, but they have particular
5 applicability for finding coins – something that ordinarily we do not do.
6
7 **MR AZNAR GÓMEZ:** Are they used by divers?
8
9 **MR DELGADO:** They are hand-held by a diver. I have deployed them myself. You
10 hold it up in front of you, it clamps *here*, you move along the bottom, depending on
11 visibility.
12
13 **MR AZNAR GÓMEZ:** Just for curiosity, Mr Delgado, do these hand-held metal
14 detectors detect gas bubbles?
15
16 **MR DELGADO:** I have never heard of that.
17
18 **MR AZNAR GÓMEZ:** It was just for curiosity. Mr Delgado, will you now please look
19 at the two abnormal deflectors installed in the stern of the *Gemini III*, which can be
20 seen and are reproduced in photograph 1 of Annex 16 of Spain's Memorial? In your
21 experience of treasure hunters, do they normally use these deflectors to remove
22 sand in shallow waters in order to disclose precious objects embedded in the sea
23 floor?
24
25 **MR DELGADO:** This technology was specifically developed by treasure hunters for
26 treasure hunting. It was first used in Florida, in particular on Spanish shipwrecks in
27 shallower depths. Treasure hunters refer to these as prop-wash deflectors, blasters,
28 blowers. They are capable of taking the thrust and excavating in shallow waters up
29 to 15 or more metres. You can excavate an additional seven-and-a-half metre deep
30 hole rapidly to get to the bottom. As a general rule, we do not use these, because
31 you have very little to no control in your excavation and the results can be damaging.
32
33 **MR AZNAR GÓMEZ:** Will you please look again at the screen? This is photograph
34 number 6 of Annex 10. How would you describe these? Have you ever seen these,
35 Mr Delgado?
36
37 **MR DELGADO:** I have never seen this before. It is interesting to me that it is cut
38 there. What you have here is the protector, the plastic or rubber boot that goes on
39 the bottom of the tank. This looks to me to be a modification to make this tank into a
40 storage vessel, which is not immediately visible or noticeable as such.
41
42 **MR AZNAR GÓMEZ:** So it can be said that an object can be put inside, then put the
43 yellow bottom, and then covered with the black rubber, so that the mark of the
44 cutting of the tank cannot be seen?
45
46 **MR DELGADO:** I could easily see it being used in this capacity.
47
48 **MR AZNAR GÓMEZ:** Let us now turn to the archaeological objects found aboard the
49 *Louisa* and the *Gemini III* and the custody of those vessels. Some of them, but not
50 all, are shown on the screen and are annexed as photographs 7 to 10 of Annex 10 of

1 Spain's written response in the phase of Provisional Measures, and as photographs
2 6 to 10 of Annex 16 of Spain's Counter-Memorial. In the black market of cultural
3 objects, what do you think would be their monetary value? Would you agree with the
4 report made by the *Museo Nacional de Arqueología Subacuática*, which has been
5 submitted by Saint Vincent and the Grenadines during the hearings in the
6 Provisional Measures phase of this case?
7

8 **MR DELGADO:** Without more information, just looking at the photographs, you have
9 a range of material that includes what appear to be stone anchors from antiquity to
10 materials that date to that time period of the 16th/17th centuries, up to perhaps the
11 19th century. I have read the report from the *Museo* and I agree in terms of what they
12 say the artefacts are, such as a Dressel amphora, but I disagree on the valuation. In
13 considering the value of underwater cultural heritage or artefacts such as this, you
14 can look at a black market value. That black market value can vary depending on the
15 context of the find. It is well known in the case of plundering antiquities, say from a
16 tomb in a land-based country such as Italy, that, without a more distinct context, you
17 can only say, "This is Etruscan from a certain period", for example. However, if you
18 have context, it gains a higher value, but the true value is not measured in dollars or
19 euros but measured in the context of the scientific information, and in that context is
20 everything. To have artefacts such as these, which seemingly have been recovered
21 without a plan, which have been recovered without preservation treatment, which
22 one can see from the corrosion on the metal objects, including concretion, which is
23 material formed around rusting metal objects, which in and by itself might appear
24 valueless but yet in which on other sites we have seen well preserved organic
25 remains, including paper, the context is lost. It is not dissimilar, if you looked at the
26 history of the Bay of Cádiz as a series of volumes of history, artefacts such as this
27 represent pages irreparably torn out of those books.
28

29 **MR AZNAR GÓMEZ:** Correct me if I am wrong, but it could be said that the value of
30 these objects, once they have been de-contextualized, cannot be, but instead the
31 damage to the archaeological site could be invaluable?
32

33 **MR DELGADO:** For these artefacts to have been recovered in this fashion is to have
34 destroyed practically all their value. The only possibility that sometimes exists when
35 you see artefacts recovered is that in certain treasure hunting operations proof of a
36 find is necessary. In some cases under admiralty law treasure hunters will recover
37 an artefact and take it to an admiralty court to have the site arrested. Such was the
38 case with Odyssey Marine and the *Nuestra Señora de las Mercedes*. In other cases,
39 though, what we have seen is that people will recover artefacts, take them back to
40 investors and say, "Here is our proof. We are looking for a ship of this time period.
41 Here are artefacts that date from that period. You can see that we are getting close,
42 so if you invest now, you can step up and have a share". For now it is a cannonball,
43 tomorrow it is a gold coin.
44

45 **MR AZNAR GÓMEZ:** So it is impossible to translate in monetary value the
46 importance of an archaeological site. You have told us that, among other projects,
47 for example, you have been fully engaged with the father of archaeology, George
48 Bass in Turkey and how he has been involved for such a long time with the same
49 sites in Turkey, so the destruction of this archaeological site would be irremediable
50 and irreparable, would it?

1
2 **MR DELGADO:** There is no way to characterize this monetarily. It is an irreparable
3 loss when something like this happens. George Bass conducted an excavation off
4 the coast of Turkey with his students – a site known as Uluburun. It is currently the
5 oldest known shipwreck excavated. It was discovered and was at risk of being
6 plundered, not because it was seen to have a rich treasure but because it had
7 copper ingots, the basic raw commodity of the Bronze Age, in this 3,000-year-old
8 shipwreck. Eleven seasons of field excavation later, fragile remains, including the
9 world's first open book tablet, organic remains such as ostrich eggs, a collection of
10 gold – actually the largest collection of gold from a shipwreck in antiquity – all of this,
11 when analyzed, demonstrated that twelve separate cultures in the Bronze Age were
12 engaged in international trade, from Baltic amber to materials from Equatorial Africa,
13 to the Levant, to the western Mediterranean; in short, a global trade in that time
14 period, which re-wrote history, and had it been treated in this fashion, we would not
15 have that.

16
17 **MR AZNAR GÓMEZ:** Dr Delgado, have you realized that in our conversations, if it
18 can be so called, apart from when expressly referring to treasure hunters you and I
19 have been talking about heritage and not about treasures, as Saint Vincent and the
20 Grenadines' pleadings and Memorial say?

21
22 **MR DELGADO:** Yes, we have been talking about heritage. Heritage is important; it
23 is why I became an archaeologist. I grew up watching prehistoric sites being
24 bulldozed at a time when nobody cared. I saw human remains destroyed and skulls
25 taken away as collector's items. It was not just the disrespect to those thousands-of-
26 years-old people; it was all that was being lost, and it was, I think, for me an
27 opportunity to work with my colleagues to carefully find sites, to excavate. You
28 cannot save it all but you can try.

29
30 **MR AZNAR GÓMEZ:** Let me pursue, if I may, a quite personal question. You are not
31 only, so to say, a theoretical archaeologist; you are also a diver with long experience,
32 and you have dived on a lot of archaeological sites. Not with the same experience,
33 but I do also dive, and I had the opportunity to accompany your colleagues and
34 suddenly see something in the bottom of the sea. Would you be able to compare
35 your personal feeling when diving and you suddenly found this with your personal
36 sensation when you suddenly see an artefact, an object de-contextualised that some
37 treasure hunters, or even accidentally, has been pulled out from the bottom of the
38 sea? I know this is quite personal.

39
40 **MR DELGADO:** Archaeology is personal because it is the story of us as people
41 throughout our time on this planet. Perhaps for me I can explain the feeling from the
42 work I did in Japan. There we were, diving on shipwrecks associated with the
43 invasion of Japan in 1281 by Kubla Khan, the Yüan Emperor of China and the
44 Mongol leader, the great Khan of the Mongols. This episode is well known in history
45 particularly to the Japanese because of the events that ended the invasion with the
46 rise of a divine wind or Kamikaze. This, for seven hundred years, has resonated
47 through Japan's history and the rest of the world's history. It is almost legendary, and
48 yet on the bottom, working with my colleagues from Japan, we paused and suddenly
49 discovered lying in the mud the fragmented remains of a soldier. You could tell this
50 because the remains of his leather armour lay scattered about him. His helmet was

1 to one side. His rice bowl was sitting there, and he had written in ink on the bottom
2 his name, Wang, and his rank of centurion in the Khan's army. His sword lay close
3 by him as he lay there, face down in the mud. That was an incomparable moment for
4 me, as an archaeologist, because, one, despite the violence of the storms that sank
5 the Khan's fleet, despite the intervention of seven centuries, what lay there on the
6 bottom was a human being, part of something bigger than he might have ever
7 imagined, someone who spoke as well through the analysis of his bones in fact that
8 he was Chinese not Mongol, that he had been caught up in the Khan's empire and
9 had gone there, as had 95% of those troops. As I looked at him I wondered if, seven
10 centuries past, someone waited for him in Guangzhou, perhaps, never to return
11 because of the events that led to him being there for us to find seven centuries later.
12 I shudder to think what would have happened had someone gone and blown a hole
13 through that mud to recover that helmet and scattered that leather armour or those
14 fragments of bones.

15

16 **MR AZNAR GÓMEZ:** With the inherent limits implied in my following question, and
17 your presence as an expert before this Tribunal, and given all the information you
18 have on the activities described in this case, do you think that the vessels and
19 people represented here by Saint Vincent and the Grenadines were exploring oil and
20 gas in Spanish waters, or were they looting underwater cultural heritage?

21

22 **MR DELGADO:** I can see no other rationale for being where they were specifically
23 and deploying the type of equipment they were using and with the variety of artefacts
24 found than the recovery of archaeological heritage.

25

26 **MR AZNAR GÓMEZ:** Thank you so much, Mr Delgado. Mr President.

27

28 **THE PRESIDENT:** Pursuant to article 80 of the Rules of the Tribunal an expert
29 called by one Party may also be examined by the other Parties. Therefore, I ask the
30 Co-Agent of Saint Vincent and the Grenadines whether the Applicant wishes to
31 cross-examine the expert. Mr Weiland.

32

33 **MR WEILAND:** Yes, Mr President, I have quite a few things to talk to him about.

34

35 **THE PRESIDENT:** You have the floor.

36

37 **MR WEILAND:** Mr Delgado, you were introduced to us as an Adjunct Professor,
38 University of Rhode Island. That is what the Spanish delegation gave us when we
39 got our witness list. I presume among your many credentials that you must spend a
40 little time in Rhode Island.

41

42 **MR DELGADO:** I do. I am an Adjunct Professor in the Department of
43 Oceanography, the Graduate School of Oceanography at the University of Rhode
44 Island. I was asked to join the faculty because of my experience in particular in
45 dealing with deep-water wrecks and because I was asked very specifically as well to
46 sit on the undergraduate thesis committee for a student obtaining his PhD with
47 shipwrecks in the Mediterranean. I have maintained my Adjunct Professorship with
48 the University and consistently communicate with my colleagues there.

49

1 **MR WEILAND:** You seem like a famous guy. Why were you described as an Adjunct
2 Professor in Rhode Island? Do you think perhaps the Spanish were trying to hide
3 you until you came to testify? Did you talk to them about that?
4

5 **MR DELGADO:** No, I did not, but let me be very clear on the position of the
6 Government of the United States in regards to my presence here. I am not here
7 officially. I have, however, cleared my participation as an expert witness with the US
8 Government, with the State Department and as well within my own agency through
9 departmental ethics lawyers all the way up to the Department of Commerce. My
10 participation had to be approved even though I am here on holiday or vacation time
11 and receiving no compensation. I still had to be clear that I was not appearing as a
12 representative of the US Government, as an employee of the Department of
13 Commerce, or as an archaeologist in the employ of the Government, sir.
14

15 **MR WEILAND:** You are on the payroll of the US Government but you are not being
16 compensated by the Spanish for being here today – is that correct?
17

18 **MR DELGADO:** That is correct.
19

20 **MR WEILAND:** Indeed the US Government has done quite a few favours for Spain
21 when it comes to the subject of recovering shipwrecks and treasure, has it not?
22

23 **MR DELGADO:** I do not know if I would characterize the US Government's actions
24 in regards to Spain as doing favours. There are certain ---
25

26 **MR WEILAND:** Excuse me. We had a little trouble yesterday – you were not here –
27 so I am going to ask you if you would do me a favour because we have a lot of
28 important Judges here and we want to try to ask questions and get answers and
29 move through this. When I am finished, if there are unsaid things I am sure Counsel
30 for the Respondent will get up and ask you so you will have a chance to say anything
31 you think you would like to say. I do not want to cut you off, I really do not, but I do
32 have several questions I would like to ask you.
33

34 You consulted on the case of *Nuestra Señora de Las Mercedes*, which was a recent
35 case – correct?
36

37 **MR DELGADO:** Before we go there you did actually cut me off in my previous
38 answer.
39

40 **MR WEILAND:** We will go back to that. Let us just ask this one first. You consulted
41 in connection with that case.
42

43 **MR DELGADO:** Yes, I did.
44

45 **MR WEILAND:** That is a pretty notorious case because in that case the Odyssey
46 ship, which was the *Odyssey Explorer* or *Ocean Alert*, had been offshore Cádiz and
47 recovered quite a bit of artefacts from this ship. Which ship was it, do you know – or
48 was it both?
49

1 **MR DELGADO:** In the case of *Nuestra Señora de Las Mercedes*, sir, I actually did
2 not participate in that case as an employee of the United States Government. That
3 was prior to my return to public service. I was then at that time in my capacity as the
4 President of the Institute of Nautical Archaeology, and in that case as well also
5 served without compensation.

6
7 **MR WEILAND:** At that point you were on the payroll of the State of Texas.

8
9 **MR DELGADO:** No, sir, I was on the payroll of this non-profit, non-governmental
10 organization.

11
12 **MR WEILAND:** Was that associated with Texas University?

13
14 **MR DELGADO:** It has an academic association.

15
16 **MR WEILAND:** Let us just talk about the *Nuestra Señora* – I will call it that, if it is all
17 right with you.

18
19 **MR DELGADO:** Sure.

20
21 **MR WEILAND:** You consulted for Spain because the ship was – how far off the
22 shore was the ship?

23
24 **MR DELGADO:** The ship was a considerable distance offshore. I cannot remember
25 exactly the total mileage.

26
27 **MR WEILAND:** Was it in the Gulf of Cádiz?

28
29 **MR DELGADO:** Yes, it was.

30
31 **MR WEILAND:** So there is a ship offshore in the Gulf of Cádiz, and a United States
32 corporation, which is actually a public company, is it not? It has shareholders.

33
34 **MR DELGADO:** Yes.

35
36 **MR WEILAND:** They thought they had salvage rights because it was in international
37 waters or something – correct?

38
39 **MR DELGADO:** As events would bear out, they had asked the Spanish Government
40 for a licence to recover cargo and other materials from shipwrecks in the Bay of
41 Cádiz. That had not been granted. They turned off their location finders, their GPS.
42 They went to this site, recovered artefacts, took them to Gibraltar, flew them to the
43 United States and filed an admiralty claim, having done all this surreptitiously. They
44 then litigated that for a period of time. I was asked, as an expert in underwater
45 archaeology, not because of whom I worked for, to examine the material because (1)
46 I had experience in vessels of the period; (2) I had experience of vessels which
47 seemed to have suffered from loss due to explosion. In particular I have worked on
48 the wreck of the *USS Arizona* at Pearl Harbour in Hawaii, a very well-known wreck to
49 Americans.

50

1 **MR WEILAND:** I am sorry, I do not remember asking you about the *USS Arizona*.
2
3 **THE PRESIDENT:** I am sorry to interrupt you. Mr Delgado, would you please speak
4 more slowly so that our interpreters can follow you, and also please try to allow some
5 intervals between the statements of both of you? Thank you very much.
6
7 **MR WEILAND:** Yes, sir.
8
9 **MR DELGADO:** I am contextualising the reasons why I was asked to be an expert
10 on the *Nuestra Señora de Las Mercedes*, sir.
11
12 **MR WEILAND:** Let me just say, your credentials are fantastic. You do not have to
13 explain to me why you were asked to be an expert and talk about the *Nuestra*
14 *Señora de Las Mercedes* and help Spain – okay? We understand. The answer to the
15 question is "yes". My next question is, how much did Spain pay you for that work?
16
17 **MR DELGADO:** Spain paid me nothing for that work.
18
19 **MR WEILAND:** Did you get any compensation at all?
20
21 **MR DELGADO:** I drew my regular pay as President of the Institute of Nautical
22 Archaeology while I did that work.
23
24 **MR WEILAND:** I think the Tribunal may be familiar with this scenario, but let us pace
25 it out real quickly. First of all, is Odyssey Mel Fisher's company or is he a different
26 shipwreck finder? If somebody mentioned Mel Fisher in Florida, is he associated with
27 Odyssey?
28
29 **MR DELGADO:** No, no. Fisher is deceased and has no relationship to Odyssey.
30
31 **MR WEILAND:** After the *Odyssey* recovered these artefacts and you mentioned they
32 put in to Gibraltar and had the artefacts flown back to the United States – correct –
33 and I have seen public reports that the artefacts might have been worth as much as
34 \$500,000 – have you seen those reports, first of all?
35
36 **MR DELGADO:** I have seen a wide range of varying values applied to the material
37 that was recovered – not that low, much higher, but, yes, a wide range of reports in
38 the press.
39
40 **MR WEILAND:** Do you have any professional opinion as to what they were worth?
41
42 **MR DELGADO:** I have a distinct professional opinion as to what they were worth in
43 terms of their archaeological context. I am not a coin dealer.
44
45 **MR WEILAND:** Let us talk about the opinion that you do have. What is it?
46
47 **MR DELGADO:** The materials on the bottom reflect more than chests of silver and
48 coins. When the *Nuestra Señora de Las Mercedes* was destroyed in cannon fire with
49 British ships what went to the bottom was a floating community of Spanish sailors,
50 marines and family members, including women and children. Sitting on the bottom in

1 one kilometre of water you have the remains of those people, as reflected in their
2 personal possessions, the provisions of the ship, including jars not dissimilar to the
3 type that I just saw a photograph of – its mouth ---
4

5 **MR WEILAND:** We will come back to that.
6

7 **MR DELGADO:** You have the remains of the ship itself; you have guns, cannons,
8 you have the anchors, and you have the silver itself. All of that together is, in its
9 context on the bottom, a time capsule that speaks to the *Nuestra Señora de Las*
10 *Mercedes*. It speaks to the events of that day in battle and how the ship was
11 destroyed. You can even trace as the ship is found – trailing debris drifted off with
12 some survivors clinging to it. In some of the things that *Odyssey* recovered, for
13 example – you find very distinct evidence of individuals, say a captain of the royal
14 marines, whose breast plate was still preserved in a lump of that concretion that I
15 talked about. Treasure hunters might see those coins as being a commodity that
16 reflects a value if you melted them down, or if you sold them; but to me what they
17 represent was a process by which the mineral wealth of the Americas were mined
18 and extracted, converted into individually struck coins in a non-industrial process,
19 and how these coins in particular were coming back to Spain at a time of
20 tremendous international discord, the Napoleonic Wars.
21

22 **MR WEILAND:** Spain was robbing gold and silver from the Indians in Peru and Chile
23 and that area of the world – right?
24

25 **THE PRESIDENT:** I am sorry to interrupt you, Mr Delgado, again. You are speeding
26 again. Would you slow down? Madam Escobar, you have the floor.
27

28 **MS ESCOBAR HERNÁNDEZ** (Interpretation from French): Thank you very much,
29 Mr President. I have to object to the assertion that has just been made by the Co-
30 Agent of Saint Vincent and the Grenadines. He said expressly that Spain had robbed
31 – I repeat “robbed” – silver from Peru. Could I just inform you, Mr President, that I
32 know you are fully cognizant with the history and you know that at the time Peru was
33 a colony of Spain. At that time we carried out work over there. We were mining
34 minerals there. I am sorry, I cannot really explain it so well in French, but we minted
35 money. That was a time that was extremely interesting because during the colonial
36 period, in the 16th and 17th centuries, Spain was minting currency in those countries
37 which were our colonies, part of our Kingdom. We transported that currency from
38 Peru to Spain.
39

40 I do beg your indulgence, Mr President, to ensure that note is taken of this. I would
41 ask the Co-Agent of Saint Vincent and the Grenadines not to make such serious
42 accusations about the activities of a State in respect of a territory which was under
43 its sovereignty and under a system of administration which, with all its shortcomings
44 and problems, enabled the construction of this country in Latin America, and the
45 establishment of a system which subsequent to independence enabled the newly
46 independent republic to become an independent State and become what it is today:
47 a great country. Thank you.
48

49 **THE PRESIDENT:** I do not want to get involved in historical discussions but I would
50 appreciate it very much if, Mr Weiland, you could choose words ...

1
2 **MR WEILAND:** Yes, Mr President, I apologize. I apparently hit a nerve, and I did not
3 realize that the colonial heritage of Spain was quite such a sensitive subject.
4

5 Let me ask you finally if you will just tell us in some kind of dollar value what you
6 think the damage to the colonial heritage or the archaeological heritage was as a
7 result of the work of the *Odyssey* and those people? I believe that is where we were.
8

9 **MR DELGADO:** In regard to the characterization of the actions of Spain, I will not
10 offer an opinion. Scholars debate the activities of every colonial power ---
11

12 **MR WEILAND:** That is good because I am not asking you for that – okay? I am not
13 asking you to go there.
14

15 **MR DELGADO:** I appreciate that.
16

17 **MR WEILAND:** I am trying to get you back to the last question, which was: what was
18 the value in your mind of what the *Odyssey* people took from the *Nuestra Señora*
19 shipwreck? I am going to hook this up to something that is very important so that is
20 why I am asking. We are not just talking about some historical episode that has no
21 connection to our case.
22

23 **MR DELGADO:** In finishing that answer it struck me that the characterization that
24 you made is the same that *Odyssey* made actually, as treasure hunters, in regard to
25 the case in characterizing the actions of Spain as some form of excuse. Now, in
26 regard to dollar value, I can't begin to give you an answer in terms of the dollar value
27 other than to say it would be very considerable if you factor in all of the time that
28 would be necessary to properly do the work and to deal with this material that sat in
29 buckets for years.
30

31 **MR WEILAND:** Okay, so now I want you to try – and it may be difficult for you
32 because – I do not mean this derogatorily but you are a purist compared to the
33 people on the *Odyssey* perhaps, who were more interested in the pure dollar value,
34 market value of the coins and what-not that they brought up. What do you think the
35 pure market value was of the artefacts? Just give me a range or even give me a
36 range of what you have seen printed publicly.
37

38 **MR DELGADO:** I do not believe in market value of artefacts. I find that values as
39 expressed particularly in the press are often inflated. I find that values are often used
40 as a marketing ploy. I find that values do not reflect the real costs. If you do not do
41 archaeology properly then you avoid the costs of the type of work that was
42 employed, say, at the Uluburun or with the Kubla Khan fleet. Those market values do
43 not reflect in any way, shape or form the damage that is done by a gross calculation
44 of market value, and we would not assign market value in assessing, say, the
45 removal of Mayan tomb paintings from a site, say, at Kopan, for example, and say,
46 "this is what it means on the market". The archaeological value is paramount and it
47 has been damaged.
48

1 **MR WEILAND:** I was not in Mexico, Guatemala or Honduras; I am back over here in
2 the Gulf of Cádiz, and I am wondering if you could give us a range of what the public
3 reports were of the market value that the *Odyssey* took.
4
5 **MR DELGADO:** A range of the public reports?
6
7 **MR WEILAND:** Yes.
8
9 **MR DELGADO:** I had not paid much attention to it, so I am hesitant to just blurt out a
10 number. I can't help you.
11
12 **MR WEILAND:** When I offered the number 500 million – I think that is what I said –
13 500,000 – the actual public reports were far, far higher than that, were they not?
14 Were they not in the millions of dollars that you can recall?
15
16 **MR DELGADO:** I think they were higher.
17
18 **MR WEILAND:** Possibly hundreds of millions.
19
20 **MR DELGADO:** Possibly.
21
22 **MR WEILAND:** I meant to say 500 million – I mis-spoke earlier.
23
24 Should we take our break now, Mr President.
25
26 **THE PRESIDENT:** You still have questions?
27
28 **MR WEILAND:** I do, yes, sir.
29
30 **THE PRESIDENT:** We have reached almost one o'clock so I think we should take a
31 break and will meet again at three o'clock this afternoon. Thank you very much. *Bon*
32 *appetit.*
33
34 *(Luncheon adjournment)*