



Neutral Citation Number: [2023] EWHC 424 (TCC)

Case No: HT-2017-000383

Case No: HT-2020-000143

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
TECHNOLOGY AND CONSTRUCTION COURT (KBD)

Royal Courts of Justice
Rolls Building, Fetter Lane
London, EC4A 1NL

Date: 28/02/23

Before:

MRS JUSTICE O'FARRELL DBE

Between:

Claim no. HT-2017-000383

(1) HARRISON JALLA
(2) ABEL CHUJOR
AND OTHERS

Claimants

-AND-

(1) ~~ROYAL DUTCH SHELL PLC~~
(2) SHELL INTERNATIONAL TRADING AND SHIPPING COMPANY LIMITED
(3) SHELL NIGERIA EXPLORATION AND PRODUCTION COMPANY LIMITED

Defendants

Claim no. HT-2020-000143

THE 27,830 INDIVIDUAL CLAIMANTS LISTED IN SCHEDULE 1 (“THE INDIVIDUAL CLAIMANTS”), on their own behalf and in the representative capacities (CPR r.19.6) set out in the Claim Form dated 20 April 2020

THE 479 NIGERIAN COMMUNITIES LISTED IN SCHEDULE 2 (“THE COMMUNITY CLAIMANTS”), represented pursuant to CPR r.19.6 by:

- (i) their resident INDIVIDUAL CLAIMANTS, as set out in Schedule 1, Column F; or**
(ii) where there is no resident INDIVIDUAL CLAIMANT those resident representatives listed in schedule 3; and/or (iii) HARRISON JALLA and ABEL CHUJOR; all as set out in the Claim Form dated 20 April 2020

Claimants

-AND-

**(1) SHELL INTERNATIONAL TRADING AND SHIPPING COMPANY LIMITED
(2) SHELL NIGERIA EXPLORATION AND PRODUCTION COMPANY LIMITED**

Defendants

Oba Nsugbe KC, Stuart Cribb & Wei Jian Chan (instructed by **RBL Law Limited**) for the
Claimants

Lord Goldsmith KC, Dr Conway Blake & Tom Cornell (instructed by **Debevoise & Plimpton**) for the **Defendants**

Hearing dates: 21st, 22nd, 23rd, 24th, 28th February 2022
1st, 2nd, 3rd, 7th, 8th, 9th, 10th, 14th, 15th, 16th, 17th, 18th March 2022

Approved Judgment

This judgment was handed down remotely at 10.30am on Tuesday 28th February 2023 by circulation to the parties or their representatives by e-mail and by release to the National Archives.

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Mrs Justice O'Farrell:

Introduction

1. On 20 December 2011 an oil spill occurred in the Bonga oilfield off the coast of Nigeria (“the Bonga Spill”). The Bonga Spill emanated from an offshore floating production, storage and off-loading facility (“the Bonga FPSO”), located approximately 120 kilometres off the Nigerian coastline of Bayelsa State and Delta State within the Nigerian Exclusive Economic Zone.
2. The Bonga Spill was caused by a rupture of one of the pipelines connecting the Bonga FPSO to a single point mooring system (“SPM”), both of which were operated and controlled by one of the defendants, Shell Nigeria Exploration and Production Company Limited (“SNEPCo”), a Nigerian company regulated by the Nigerian governmental authorities. The technical manager of the vessel, the MV Northia, that was loading from the Bonga FPSO at the time of the spill was another defendant, Shell International Trading and Shipping Company Limited, (“STASCO”), a company domiciled and registered in the UK.
3. These proceedings are brought by 27,830 claimants making claims against the defendants on their own behalf and/or in a representative capacity on behalf of 479 communities, or members of those communities, in Nigeria. They allege that oil from the Bonga Spill devastated the shoreline, causing serious and extensive damage to the land, water supplies and to the fishing waters in and around the coastline. The claimants seek damages and/or compensation for pollution and environmental degradation caused by the oil spill which continues to cause ongoing damage to the land and fishing waters around the villages. The claims are made in negligence, nuisance and *Rylands v Fletcher* liability under Nigerian Law.
4. This hearing is to determine the date on which actionable damage, if any, was suffered by the claimants as a result of the Bonga Spill, for the purpose of deciding whether any of the claims against the anchor defendant, STASCO, are statute-barred for limitation and, therefore, whether this court has jurisdiction to determine the substantive claims.
5. The claimants’ case is that the Bonga Spill, when it occurred in December 2011, was the largest oil spill in the Niger Delta region for over ten years and there has been no other spill anywhere near as large in over ten years since then. It caused billions of dollars in damage, both on the shoreline and further inland, and was an environmental catastrophe. Although oil reached the shoreline in December 2011/January 2012, individuals resident in inland communities did not suffer actionable damage from the Bonga Spill until June 2014 and/or September 2015.
6. It is said by the claimants that a vast quantity of oil from the Bonga Spill reached and polluted the Nigerian Atlantic shoreline soon after it escaped but, when the oil reached the shoreline, it became stranded in a number of ways. Some of it sedimented and sunk to the bed of the sea and the connected river estuaries. Some of it became stranded on the shoreline, or formed persistent ‘tar balls’. Some of it was washed into the vast mangrove swamps of the Niger Delta, which are notorious for their propensity to trap and retain spilled oil. This stranded oil remained trapped in place for some time, during which the anoxic nature of the sediments on the sea and

riverbeds and in the mangrove environment prevented it from further weathering. It was subsequently remobilised from around March 2014 onwards by the severe storms and heavy floods that periodically afflict the region, and transported further inland through the complex network of waterways and creeks that criss-cross the mangrove swamps, as a result of the tidal and low-lying nature of the Niger Delta.

7. The claimants' case is that oil from the Bonga Spill first struck the communities of Ogheye-Uton, Abe-Bateren, Tonbrapade-Gbene and Isuku-Gbene ("the Communities") in 2014 and 2015, notwithstanding their distance in geography and time from the Atlantic coastline where it first made landfall, causing a wave of pollution across Delta and Bayelsa States from 2014 onwards.
8. The defendants' position is that the claimants have failed to provide any cogent factual or expert evidence showing that they first suffered actionable damage (if any) over two-and-a-half years after the relevant spill. It is common ground that the Bonga Spill occurred on 20 December 2011 but the defendants' case is that, in a joint effort with regulators and industry experts, SNEPCo swiftly contained and cleaned up the spill so that the oil was dispersed at sea within days of the incident.
9. It is said by the defendants that the claimants have produced no relevant fingerprinting or other oil sampling analysis to show that the material communities were affected by the Bonga Spill. There are no independent reports or primary evidence from investigations that are said to have taken place in those communities at the time they are said to have been impacted. There are no contemporaneous press articles or other media describing what happened and there is no credible photographic evidence showing the alleged oil damage. The claimants' theory as to how Bonga oil is said to have travelled inland over a number of years and impacted far-flung communities is speculative and unsupported by primary data. It is not plausible to suggest that Bonga oil from the spill reached the estuaries in question, remained dormant on the riverbeds, seabed, or in mangrove systems for several years, and then remobilised, travelled upstream and impacted communities located up to 60 km from the shoreline. The theory ignores expert evidence as to the nature and behaviour of oil, the effect of weathering, the dynamics of oil pollution and the inability of oil to travel upstream against the natural flow of the river.
10. The defendants rely on evidence that the Niger Delta, including the areas surrounding the Communities, is beset by endemic oil pollution from innumerable sources. There were hundreds of more proximate oil spills in Delta State during the years between the Bonga Spill and the alleged dates of impact. Many of those were large spills that occurred in the direct vicinity of the Communities. There is also the problem of illegal refining, which has been proliferating in the Niger Delta at an alarming rate for well over ten years. The defendants' case is that any oil pollution suffered by the Communities is more likely to have been caused by oil from other spills or illegal refining in the relevant areas.
11. The issues for determination by the Court are:
 - i) the date on which any oil from the Bonga Spill first impacted each of the Communities;

- ii) whether the appropriate limitation period applicable to the claims under Nigerian Law is five or six years;
- iii) whether, as a matter of Nigerian Law, the claimants' solicitors have authority to act for the claimants in HT-2020-000143 ("the Jalla 2 Proceedings").

The Bonga Spill

12. The Bonga Oilfield is situated offshore in the Gulf of Guinea in the Exclusive Economic Zone of Nigeria. The oilfield has an area of around 60 km² and is located between 900 and 1,100 metres below sea level. Crude oil from the oilfield is extracted through the Bonga FPSO, where it is processed, stored and exported to tankers via the SPM. The SPM comprises a buoy, permanently moored to the seabed by means of multiple mooring lines, and a fluid transfer system enabling the transmission of oil from the subsea pipelines to oil tankers. The FPSO is located and anchored 1 nautical mile (1.852 kilometres) away from the SPM and connected to it by three flexible, pressurised export lines or risers.
13. At about 19:30 on 18 December 2011, the oil tanker MV Northia arrived at the Bonga Oilfield. On 19 December 2011 it was connected to the SPM by two loading hoses each of 300 metres in length for the purposes of loading a cargo of 997,500 barrels of crude oil to be transhipped from the FPSO. The Cargo Operations Log for the vessel shows that the loading operation from the Bonga FPSO to the MV Northia commenced at 16:00 on 19 December 2011, initially at a minimum flow rate of 1,200m³/hr and subsequently increasing to a maximum flow rate of about 7,500 m³/hr.
14. It is not clear when oil leakage first occurred during the loading operation but it must have started by about 02:00 to 03:00 on 20 December 2011. From readings taken between 03:00 and 06:00 on 20 December 2011, it was observed that there was a discrepancy in the figures for the volume of oil pumped from the FPSO and the volume of oil received by the MV Northia. At 07:00 an oil sheen was observed on the surface of the water near the vessel. At around 08:00 on 20 December 2011, the FPSO's Loading Master directed that the loading operation should be stopped. The FPSO export pumps were shut down and loading ceased at 08:24.
15. Following inspection, it was discovered that there was a rupture in a section of one of the three flexible risers transporting crude oil between the FPSO and the SPM at a depth of 340-360 metres, approximately 360 metres away from the FPSO and approximately 1.5 kilometres from the SPM. The rupture in the pressurised flexible flowline caused a substantial quantity of crude oil to spill into the ocean.
16. The immediate aftermath of the Bonga Spill was captured by radar satellite data by MDA Geospatial Services Inc ("MDA"), who were engaged by SNEPCo and published a report dated 11 June 2012. Sea capillary waves reflect radar signals and produce an illuminated image. Oil on the sea attenuates the capillary waves and produces a dark spot or region. The MDA radar satellite data could identify the presence, location and surface area of the oil spill offshore by detecting the calming of small waves by the oil slick, which appeared as a black mass in contrast to the bright background produced by the signature sea clutter in conditions of at least three knots of wind.

17. The radar satellite data obtained by MDA included the following:
 - i) The first image obtained at 05:57 on 21 December 2011 showed an oil slick with an area of 615 km² moving in a north-east direction from the FPSO towards the coast between the Forcados/Warri River and Ramos River, with the farthest point of the slick about 54km from the platform.
 - ii) An image obtained at 09:30 on 21 December 2011 showed the oil slick continuing on a north-east trajectory.
 - iii) An image obtained at 05:28 on 22 December 2011 showed the oil slick continuing on a north-east trajectory, with an increased area of 1,550 km² and signs of feathering and break-up.
 - iv) An image obtained at 06:10 on 24 December 2011 showed the oil slick parallel to the shore and moving in a northerly direction, with an area of 1,776 km² and trailing remnants breaking away or having disappeared.
 - v) An image obtained at 17:49 on 26 December 2011 showed the oil slick with an area of 1,680 km², very degraded and moving northwards along the shoreline from the Forcados/Warri and Ramos Rivers.
 - vi) An image obtained at 17:20 on 27 December 2011 showed the oil slick in a similar location but more degraded and dissipated.
 - vii) An image obtained at 05:53 on 28 December 2011 showed a very weathered area of oil off the coast between the Forcados/Warri and Ramos Rivers.
 - viii) An image obtained at 05:24 on 29 December 2011 showed a much reduced area of oil offshore and near to the Forcados/Warri River.
18. Unfortunately, radar satellite imagery could not identify the presence of any oil at the shoreline because fresh or calm water would not generate a signal response to produce the signature bright background; therefore, it would simply replicate the dampening effect of oil. Further, ocean water has a higher density than fresh water so in general the more buoyant fresh water tends to float on the ocean water, resulting in fresh water plumes where a river empties into the ocean.
19. On 22 December 2011 aircraft and marine vessels were deployed to commence the application of oil spill dispersant spray. Based on the clean-up report dated 31 August 2012 by SNEPCo, by 24 December 2011 approximately 63,200 litres of Corexit and 64,200 litres of Slickgone had been applied, a total of 127,700 litres of chemical dispersant.
20. Further data is provided by the report and overflight photographs for the Bonga Spill response and monitoring carried out by Oil Spill Response Limited ("OSRL") between 22 and 24 December 2011. The reports, photographs and logs are consistent with the MDA report in identifying the shape, area and location of the oil spill during that period. The information in the OSRL reports includes the following:
 - i) The initial observation flight by OSRL recorded that there were large areas of black oil that they considered might be amenable to dispersant.

- ii) On 23 December 2011 photographs showed the oil, categorised as 25.75% sheen, 72% rainbow and 0.25% discontinuous true colour in the flight log, and described as light to medium in thickness, with an amount of weathered, brown oil at the head of the leading edge.
 - iii) Photographs taken on 24 December 2011 prior to dispersant application showed a mass of oil offshore and parallel to the shore, with feathering of one long side of the slick.
 - iv) Photographs taken on 24 December 2011 after the application of dispersant showed:
 - a) rapid dispersion in some areas:

“oil rapidly disappearing from the surface and drifting away, leaving only a sheen ...”
 - b) but slow or partial dispersion in others:

“some surface activity and spreading out of the oil but droplets rapidly rising back to the surface and overall quantity appearing to be similar to that before dispersant spraying”.
 - v) On 24 December 2011 a large area of oil black/brown in appearance was observed approximately 18-20 kilometres offshore west of the Ramos River mouth.
21. There are no photographs or radar satellite images showing any oil as it impacted the shoreline. There is a report and marked up map produced by Shell Petroleum Development Company Nigeria Limited (“SPDC”) dated February 2012, with annotated photographs showing clean-up operations along 106 kilometres of the shoreline from Forcados to Ekeni in Bayelsa State. The report states that the operation involved handpicking and disposal of oily and not-oily wastes from the surf zone and the shoreline. Excluded from this operation were the communities of Agge, Orobiri and Ogbeintu in Ekeremor LGA, Bayelsa State, to which access was not then available. There are also photographs, taken during clean-up operations, depicting what appears to be oil contamination along the beaches in Beniboye (Delta State, near the Forcados River) in December 2011 and Orobiri (Bayelsa State, near the Dodo River) in June 2012.
22. There are contemporaneous reports in which communities raised complaints that oil contaminated the shoreline in Delta State in the early months of 2012. Articles in ‘The Nigerian Voice’ dated 6 January 2012 and 9 January 2012 stated that 64 Itsekiri Communities in Warri South West and Warri North LGAs of Delta State were affected by the Bonga Spill, including Aja-Edede and Ogheye-Uton. It was reported that a letter had been sent to SNEPCo, stating:
- “Our clients asked us to inform you that your oil spill at Bonga field that occurred on December 20, 2011 flowed to their village fishing areas and thereafter disturbed their fishing

activities, stained their fishing materials, vegetations, killed aquatic lives. Some of the oil spill which your people dispersed with chemicals caused turbidity within our clients' fishing areas and also formed tire balls which were taken to our clients' shores by sea currents."

23. An article in 'Vanguard' dated 12 March 2012 stated that 200 riverine communities were affected by the Bonga Spill, including Aja-Edede and Ogheye-Uton, quoting the same sources as above, together with other reports of the impact of oil contamination on water supplies and fishing in the communities.
24. On 22 February 2012 Fugro Nigeria Limited ("Fugro"), instructed by SNEPCo, produced a report, detailing its chemical analysis of 69 samples, said to be free oil, soils, sediments and water taken from various locations offshore and on stretches of the Nigerian coastline, supplied to Fugro between 10 January 2012 and 9 February 2012. The samples were analysed by gas chromatography and compared to known samples of Bonga crude, Bonny light crude and Forcados blend. Fugro's conclusion was that many of the crude oil samples were a match for Bonga oil, as were some soil samples, but most of the soil samples were not such a match.
25. The Nigerian Maritime Administration and Safety Agency ("NIMASA") carried out an investigation into the Bonga Spill and prepared a presentation dated 16 July 2012 but it is now common ground that the exhibited photographs showing oil pollution do not depict the Bonga Spill. Therefore, this evidence does not assist in establishing the timing or extent of any oil pollution.
26. In 2012, Mr Dan Ekotogbo, an estate surveyor and valuer, was instructed by the National Oil Spill Detection and Response Agency ("NOSDRA") to carry out a survey and valuation of properties affected by the oil spill, so that NOSDRA could seek compensation from those responsible. From March 2014 until around 7 July 2014 Mr Ekotogbo and his team visited approximately 422 communities and found damage that they attributed to the Bonga Spill in approximately 350 communities. The list of coastal communities and satellite villages found to be affected by the oil spillage included Ogheye-Uton, Abe-Bateren and Tonbrapade-Gbene.
27. During the Ekotogbo survey, photographs were taken and samples were collected from the communities but, as recognised in the report, they were of limited value because they were not taken until fifteen months after the oil spill. In any event, they have not been made available as evidence in this case. On 7 July 2014 Mr Ekotogbo submitted a valuation report to NOSDRA, valuing the damage at US \$3.6 billion.
28. A letter dated 19 December 2014 from NOSDRA to SNEPCo stated that SNEPCo was liable for damage caused by the Bonga Spill and demanded US \$3.6 billion as compensation and punitive damages. That demand was repeated in a further letter from NOSDRA dated 25 March 2015, stating that the clean-up operation carried out by SNEPCo failed to remediate the ecology of the shoreline and, as a result, permanent damage had been suffered.
29. On 26 February 2021, the Nigerian Court of Appeal granted declaratory relief to SNEPCo, finding that NOSDRA did not have power to impose a fine or award compensation and therefore the demand was ultra vires and a nullity.

Proceedings

30. On 13 December 2017 two of the claimants, Harrison Jalla and Abel Chujor, issued proceedings in claim HT-2017-000383 (“the Jalla 1 Proceedings”) against SNEPCo and two other Shell companies who are no longer parties to the proceedings.
31. Initially, Mr Jalla and Mr Chujor claimed damages, each on their own behalf, as residents of a coastal community, Aja-Edede. On 4 April 2018 the Claim Form was amended to include claims by Mr Jalla and Mr Chujor for themselves and in a representative capacity pursuant to CPR 19.6, on behalf of the Bonga Community, some 27,830 individuals, together with 457 communities. In the Particulars of Claim served on 10 April 2018 the claimants were described as:
 - i) Nigerian individuals and communities occupying land along the Nigerian coast on the Atlantic Ocean spanning two states, Bayelsa State and Delta State;
 - ii) having an estimated combined population of several hundred thousand;
 - iii) comprising fishing, farming and periwinkle pickers, and undertaking commercial and subsistence fishing, shellfish harvesting and other coastal, maritime and riparian activities; and
 - iv) having sought from the defendants but been refused compensation.
32. In the Jalla 1 Proceedings the claimants allege that oil from the Bonga Spill devastated the shoreline, causing serious and extensive damage to the land, water supplies and to the fishing waters in and around the coastline, summarised as follows:
 - i) Fishing/fish trading - there has been a dramatic reduction in various species of fish, especially the Bonga fish, and fishing, periwinkle picking and shellfish harvesting industries have been devastated.
 - ii) Farm land - farmland has been directly impacted by permeating oil from the spills and crop yields have diminished due to soil and environmental toxicity.
 - iii) Drinking water - the oil spills have caused pollution to the environment and contaminated the ground and drinking water forcing the claimants to find alternative sources of water at significant additional cost, disproportionately negatively impacting their modest incomes.
 - iv) Mangroves - wood from the mangrove forest has become unsuitable for cooking oil and other domestic tasks forcing the claimants to find and utilise more expensive alternative sources of energy; many hectares of mangrove forest and swamp, the natural habitat and ecosystems supporting large populations of shellfish and fish, have been negatively impacted, diminishing the claimants’ incomes and destroying sources of food.
 - v) Shrines - traditional shrines and objects of traditional religious veneration have been destroyed by the oil spills, causing the claimants distress, shock, fear and anxiety.
 - vi) Land - the claimants have suffered diminution in the value of their land.

- vii) Industry - a reduction in fishing activity has reduced demand for services relating to the fishing industry, including the sale of fishing paraphernalia, mending of fishing nets and traps, hiring of boats, maintenance of boats, and the maintenance and preservation of fish pools.
33. Originally, there was a pleaded allegation that a second oil spill in July 2012 caused or contributed to the above damage but that allegation is no longer pursued.
34. The Claim Form, as amended on 4 April 2018, sought to substitute STASCO as a defendant in place of the original second defendant in the Jalla 1 Proceedings.
35. In September 2018 the defendants sought to challenge jurisdiction, having indicated such a challenge in their acknowledgement of service, and to strike out the claims against STASCO on a number of grounds, including an argument that any claims against STASCO were statute-barred.
36. On 3 April 2019, as amended on 12 July 2019 and on 3 October 2019, the claimants served further proposed amendments to the Particulars of Claim in the Jalla 1 Proceedings, seeking to plead additional allegations in support of the claims against STASCO. The proposed amendments were opposed by the defendants on the ground that they were statute-barred.
37. In September and October 2019 the challenges, together with the applications to amend and a wide range of other applications, were heard by Stuart-Smith J (as he then was). On 2 March 2020 the Judgment was issued (“the Jurisdiction Judgment”), reported at [2020] EWHC 459. In relation to limitation, the court considered the evidence available at paragraphs 59-61 and concluded:

“In summary, and without conducting a mini-trial of the issue:

- i) It is clear that many claimants will have suffered actionable damage before 4 April 2012;
- ii) On current information the Defendants have a reasonably arguable case on limitation, though it is not certain that all Claimants suffered actionable damage caused by oil from the December 2011 spill before 4 April 2012;
- iii) If and to the extent that the Claimants had not suffered actionable damage before 4 April 2012, it is arguable and inherently plausible that some may have suffered actionable damage between April 2012 and June 2013;
- iv) On present information it is not possible to exclude the possibility that some Claimants may first have suffered actionable damage after June or even October/November 2013. There is, however, at present no reason to conclude that they did; On present information it is not possible to reach any further conclusions for the purposes of these applications about who suffered damage when.”

38. The court determined that the claims for damage caused by the Bonga Spill could not constitute a continuing nuisance until any pollution was remedied, so as to extend the limitation period and defeat the defendants' limitation defence; the claimants each had a single claim in nuisance in respect of any damage caused by the Bonga Spill, such cause of action accruing when their land and/or water supplies were first impacted by the oil. The claimants' appeal against that part of the judgment was dismissed by the Court of Appeal, reported at [2021] EWCA Civ 63 ("the Continuing Nuisance Appeal"). There is an outstanding appeal to the Supreme Court on this issue.
39. Stuart-Smith J further held that the court had no discretion to allow, or would refuse, amendment of the claim form to join STASCO and the amendment to add allegations against STASCO, if and to the extent that the applications were made after the expiry of the relevant limitation period. The allegations against STASCO in respect of its responsibility for the MV Northia were deemed by the court not to have been made until 2 March 2020.
40. The issue of jurisdiction as against SNEPCo, a Nigerian corporation, is dependent on there being a valid claim against STASCO, a UK corporation. The court rejected other jurisdictional challenges made by the defendants but was unable to finally dispose of the challenge to jurisdiction because it was subject to the outstanding issue as to whether the claims against STASCO were statute-barred. If the claims against STASCO, the anchor defendant, were statute-barred, there would be no basis on which service out of the jurisdiction against SNEPCo could be permitted and the court would have no jurisdiction to determine any of the claims.
41. Given the significance of the limitation issue, the court ordered that there should be a trial of preliminary issues to determine in respect of all claimants the date on which they suffered damage, the appropriate limitation period and limitation as a defence to the claims.
42. Accordingly, by order dated 27 March 2020, the claimants were required to serve by 24 November 2020 a Date of Damage Pleading ("DODP") setting out their case on when all relevant accruals of damage occurred with sufficient particularity to enable the defendants to know the case they had to meet, any lay evidence upon which they relied in the proceedings in support of the case advanced by the DODP and any expert evidence upon which they wished to rely in the proceedings in support of the case advanced by the DODP.
43. On 20 April 2020 the Jalla 2 Proceedings were issued as protective proceedings. The Jalla 2 Proceedings comprise claims against the defendants, STASCO and SNEPCo, by 27,830 individuals (mostly, but not all, the same individuals who were parties to the Jalla 1 Proceedings, including Mr Jalla and Mr Chujor), claiming on their own behalf and as representatives of 479 communities in the Delta and Bayelsa States pursuant to CPR 19.6.
44. The claims in the Jalla 2 Proceedings are made on the same basis as the claims in the Jalla 1 Proceedings but they are not confined to claims by individuals or communities occupying land along the Atlantic coast of Nigeria. It is pleaded at paragraph 3 of the Amended Particulars of Claim that:

“Crude oil from the Bonga Spill came inland and reached the Claimants’ land, waterways and property (located and as described below). For those claimants living in relative proximity to Nigeria's Atlantic shoreline, this occurred in December 2011 or shortly thereafter. For others, living further inland in the delta hinterland of Nigeria's Atlantic shoreline, this occurred months or years later, as oil from the Bonga Spill took time to migrate a significant distance and reach different areas inland.”

45. In a judgment dated 14 August 2020 reported at [2020] EWHC 2211 (“the Strike-Out Judgment”), the court struck out the representative action in the Jalla 1 Proceedings, leaving Mr Jalla and Mr Chujor as the remaining claimants. That judgment was upheld by the Court of Appeal in a judgment dated 29 September 2021, reported at [2021] EWCA Civ 1389 (“the Strike-Out Appeal”). There has been no further appeal on that issue to the Supreme Court. The defendants have reserved the right to challenge the representative action in the Jalla 2 Proceedings, although that is not a matter for the court to determine in this hearing.
46. At a case management conference on 19 November 2020, this court ordered that the preliminary issues hearing would be fixed for 21 February 2022 (with an estimate of 4 weeks) to determine the issues of limitation in both the Jalla 1 Proceedings and the Jalla 2 Proceedings (see transcript of the judgment at [2020] EWHC 3281) (“the CMC Judgment”). Taking into account earlier slippage in the timetable, logistical difficulties in obtaining necessary evidence from the Delta and Bayelsa regions and expansion of the limitation issues to include the Jalla 2 Proceedings, the date on which the claimants were required to serve the DODP for Jalla 1 and Jalla 2 was extended to 4 June 2021.
47. Following a further agreed extension of time, on 2 July 2021 the claimants served the DODP, together with supporting factual and expert evidence.
48. At a CMC hearing on 20 and 21 July 2021 the court refused any further extension of time for the claimants to provide additional details of the case on date of damage or adduce further expert evidence, having considered all relevant circumstances, including the prejudice suffered by the claimants if they were not allowed to advance their claims, the lengthy extensions of time already granted, the impact of any further delay on the viability of the hearing date, and the prejudice that would be caused to the defendants by late additional evidence (see transcript of the judgment at [2021] EWHC 2118) (“the Extension Judgment”). That judgment was upheld by the Court of Appeal in a judgment dated 29 September 2021, reported at [2021] EWCA Civ 1559 (“the Extension Appeal”).
49. At the July 2021 CMC the court expanded the scope of the Date of Damage hearing to include the issue of authority. On 26 August 2020 Rosenblatt, now RBL Law Limited, came on the record as solicitors acting for the claimants. A dispute arose between the parties as to whether RBL had authority to issue and conduct proceedings on behalf of all claimants identified as such in the Jalla 2 Proceedings. At the CMC on 19 November 2020 the court ordered the claimants to provide evidence as to the basis on which RBL were authorised to act on behalf of the individual and community claimants. The claimants served evidence on this issue as required by the court but the

defendants disputed that such evidence was sufficient to establish the necessary authority. On 21 July 2021, having regard to the significance of the issue, namely, whether RBL had authority to issue these claims on behalf of thousands of individual claimants and potentially hundreds of thousands of community claimants, the court ordered that this additional unresolved dispute should be heard at the Date of Damage Hearing (see transcript of the judgment at [2021] EWHC 2121) (“the Authority Directions Judgment”).

50. On 8 October 2021 the court clarified that issues of causation, including the question whether oil from the Bonga Spill impacted the Nigerian Atlantic shoreline (“the Landfall Issue”), were not within the scope of the Date of Damage Hearing. None of the parties included the issue of causation as an issue that should be determined when the scope of the hearing was considered at the CMC in November 2020 and it was too late to broaden the scope of the hearing, particularly given that jurisdiction was still subject to challenge (see transcript of the judgment at [2021] EWHC 2812) (“the Scope of Hearing Judgment”).
51. On 26 November 2021 the defendants served their Response to the DODP, together with supporting factual and expert evidence.
52. On the same date, the claimants served an Amended DODP, with the written consent of all parties.

The Date of Damage Pleadings

53. The claimants’ DODP is limited to:
 - i) the personal claims of Mr Harrison Jalla and Mr Abel Chujor in the Jalla 1 Proceedings;
 - ii) the personal claims of Mr Dennis Ojulu, Mr Johnson Agbeyagbe and Ms Elizabeth Ekolokolo in the Jalla 2 Proceedings, all of whom are residents in the community of Ogheye-Uton; and
 - iii) the claims brought on behalf of the Communities, namely, Abe-Bateren, Isuku-Gbene, Tonbrapade-Gbene and Ogheye-Uton, in the Jalla 2 Proceedings.
54. The claimants’ DODP originally included a claim brought on behalf of a fifth community, Ugbuegin, supported by the witness statement of Kingsley Ofuna. By letter dated 9 February 2022, the claimants informed the defendants that they would no longer be calling Mr Ofuna to give oral evidence at the hearing. Accordingly, the claimants do not rely on his witness statement and do not seek to prove the allegations in the DODP pertaining to Ugbuegin at this trial.
55. The claimants’ pleaded case is as follows:
 - i) Approximately 2,042,316 kg / 15,000 barrels of oil reached a 100 kilometre stretch of the Nigerian Atlantic coastline in Delta and Bayelsa States (“the Affected Shoreline”) by around 28 December 2011.

- ii) The defendants' alleged efforts to contain and disperse the Bonga Spill at sea and before it reached the Affected Shoreline were unsuccessful. Containment booms were not deployed around the FPSO and insufficient quantities of chemical dispersants were applied too late to be effective.
- iii) Oil that reached the Affected Shoreline emanated from the Bonga Spill and not an unidentified third party spill as alleged by the defendants ("the Mystery Spill").
- iv) The defendants' attempts to clean up the Affected Shoreline were inadequate, with the result that vast quantities of oil from the Bonga Spill remained stranded on the Affected Shoreline, the adjacent sea bed of the Atlantic Ocean, the beds of the connected waterways and/or in mangrove swamps for months and/or years following the first arrival of the Bonga oil.
- v) The stranded oil from the Bonga Spill was subsequently remobilised by the heavy weather events that regularly affect the Niger Delta and transported inland by the action of floods, the wind, waves and tides so as to reach the locations of the claimants at Ogheye-Uton, Abe-Bateren, Isuku-Gbene and Tonbrapade-Gbene ("the Communities").
- vi) Bonga Oil first reached the Communities as follows: (a) Ogheye-Uton on around 1 June 2014; (b) Abe-Bateren on around 20 June 2014; (c) Isuku-Gbene on around 1 September 2015; and (d) Tonbrapade-Gbene on around 1-10 September 2015.
- vii) The pollution in the Communities did not result from other oil spills or leaks in the Niger Delta region, caused by crude oil theft, sabotage, illegal refining or otherwise. Those other minor and geographically localised spills are not a credible explanation for the wave of pollution that began to sweep the Niger Delta from 2014 onwards.
- viii) As a matter of Nigerian law, the applicable limitation period is six years, rather than five years as alleged by the defendants. The claims identified in the DODP are not statute-barred.

56. The defendants' pleaded response to the DODP is as follows:

- i) For the purpose of the preliminary issues to determine the date of damage and limitation, the parties have assumed that oil from the Bonga Spill reached the Nigerian shoreline.
- ii) However, the defendants deny that Bonga oil reached the shore in the quantity or state alleged by the claimants. The oil from the Bonga Spill was substantially degraded, and largely evaporated and dissipated at sea, in the days following the spill in December 2011 through natural processes and clean-up interventions by SNEPCo, including the application of chemical dispersants. Therefore, any oil from the Bonga Spill that reached the shoreline would be minimal and weathered.

- iii) Any oil from the Bonga Spill that reached the shoreline could not become stranded on the shoreline, in sediments on the sea bed, riverbeds or estuaries and/or in mangrove swamps, where it could lie dormant without degrading for more than two years following the first arrival of the Bonga oil.
 - iv) There is no evidence or sound scientific basis on which it could be established that any stranded oil from the Bonga Spill could be remobilised, transported upstream and against estuary tides to the inland communities.
 - v) The communities of Ogheye-Uton and Abe-Bateren (if it continues in existence) are located on or near the shoreline and any impact from Bonga oil would have occurred in December 2011 or within a few months thereafter. The communities of Isuku-Gbene and Tonbrapade-Gbene do not exist, or do not exist in the locations identified by the claimants.
 - vi) It is implausible that any oil pollution suffered by the Communities in 2014 and/or 2015 was attributable to the Bonga Spill, rather than another, more proximate source of pollution in time and location.
 - vii) As a matter of Nigerian law, the applicable limitation period is five years. All the claims are statute-barred.
57. There is a measure of common ground as to the implications of the findings in the current hearing. To the extent that a given claimant/claim is proven at this hearing to be 'in time', that claimant/claim will have a real prospect of success as against STASCO, and the court will assume jurisdiction in respect of that claimant/claim over SNEPCo. To the extent that a given claimant/claim is proven at this hearing to be 'time barred', the claimant/claim against STASCO fails, and the court will not assume jurisdiction over SNEPCo, service out upon which will fall to be set aside.
58. The claimants accept that, subject to their outstanding appeal to the Supreme Court on the issue of continuing nuisance, the claims of any claimants in the Jalla 2 Proceedings not covered by the claimants' DODP cannot proceed.
59. Pursuant to the Scope of Hearing Judgment and as set out in the Order dated 5 November 2021, the scope of this hearing is confined to the issues of date of damage, limitation and authority set out in the Orders dated December 2020 and August 2021; it does not extend to general issues of causation, such as whether oil from the Bonga spill, rather than a third party spill, impacted the Nigerian Atlantic shoreline "i.e. the Landfall Issue". Accordingly, the parties agreed that for the purposes of the Date of Damage hearing, the court would proceed on the assumption that some oil from the Bonga Spill reached the Nigerian shoreline (and did so within weeks rather than months of the December 2011 Spill) as set out in the agreed list of issues.
60. As confirmed in the November 2020 CMC Judgment, whether the court has jurisdiction under CPR r. 19.6(1) to try the representative claims purportedly brought on behalf of the community claimants in the Jalla 2 Proceedings is not a matter to be determined at this hearing.

The Issues

61. The issues to be determined have been agreed by the parties as follows:
- i) Issue 1: What is the appropriate limitation period(s) applicable to the claimants' claims, including as a matter of Nigerian law?
 - ii) Issue 2: Assuming oil from the Bonga Spill reached the Nigerian shoreline, have the claimants shown that Bonga oil became trapped; remobilised years later; migrated upstream and inland; and impacted any of the Communities (as marked on the [Five] Communities Map) for the first time on the following dates:
 - a) Ogheye-Uton on or around 1 June 2014;
 - b) Abe-Bateren on or around 20 June 2014;
 - c) Isuku-Gbene on or around 1 September 2015;
 - d) Tonbrapade-Gbene on or around 1-10 September 2015?
 - iii) Issue 3: Whether, as a matter of Nigerian law, the claimants' solicitors have authority to act for the claimants in the Jalla 2 proceedings.

Evidence

62. The court heard evidence from the following factual witnesses:
- i) Mr Harrison Omotsola Jalla, one of the lead claimants in these proceedings, who lives in Aja-Edede but owns a fish farm in Abe-Bateren (his grandmother's village) and a fish farm in Isuku-Gbene (his wife's village);
 - ii) Mr Abel Chujor, the other lead claimant in these proceedings, who lives in Aja-Edede but owns a fish farm in Tonbrapade-Gbene (his wife's village);
 - iii) Mr Mackson Ikinbor, the Community Leader and Chairman of Community Development for Isuku-Gbene;
 - iv) Mr Felix Demeyin, the Community Leader and Chairman of Community Development for Ogheye-Uton;
 - v) Mr Yahere Emmanuel, the Community Leader and Chairman of Community Development for Tonbrapade-Gbene in Delta State, Nigeria;
 - vi) Mr Dan Ekotogbo, an Estate Surveyor and Valuer who, in March 2014 was commissioned by NOSDRA to survey the damage caused by the Bonga Spill and in June 2014 prepared a report ("the Ekotogbo Report") which formed the basis for the fine of US\$3.6 billion levied by NOSDRA on SNEPCo;
 - vii) Honourable Olayjemi Johnson Nanna, an elder of the Koko community of the Itsekiri tribe of the Warri Kingdom in Delta State, Nigeria;
 - viii) Chief Rumson Victor Baribote, High Chief on the committee of kingmakers for the Akugbene Mein Clan of the Ijaw tribe in Delta State, Nigeria;

- ix) Mr Aloysius Okerieke, secretary to the Bonga Oil Spill Steering Committee and the Oil Spills Initiative Victims Vanguard (“OSPIVV”).
63. It has been suggested that some of the witnesses were untruthful or misleading. The evolving and changing nature of the claims, described in the Strike-Out Judgment by Stuart-Smith J as “*Kafkaesque*”, has not served the interests of the claimants and it is unfortunate that they have been forced on more than one occasion to accept that evidence served has been wrong or misleading. Some of the evidence is not credible, or contains discrepancies, casting doubt as to its reliability, as explained below; in particular, there was a lack of clarity and precision in respect of the location of the material communities and the date on which damage was first suffered. Notwithstanding those concerns, however, it does not follow that their evidence should be discarded; it is imperative that the court considers all oral and documentary evidence concerning each factual allegation, against the substantial body of expert evidence available, to ensure a fair and proper determination of the issues.
64. The court received reports and heard oral evidence from the following experts for the claimants:
- i) Dr Daniel Sheard, formerly a partner at Brookes Bell, now an independent expert operating as Sheard Scientific, who in the Brookes Bell report, prepared a statistical analysis of the fingerprinting results of oil samples taken in the Delta and Bayelsa region documented in the Fugro report dated 22 February 2012;
 - ii) Dr Bryan Ward, a consulting scientist at Brookes Bell, who prepared a chemical analysis / spectroscopy report on the fingerprinting analysis in the Fugro report;
 - iii) Captain Alexandros Bekas, a retired Navy Captain and International Oil Pollution Compensation Funds technical expert, who carried out oil spill modelling and analysis in respect of the Bonga Spill as set out in the Environmental Protection Engineering SA Report (“the EPE Report”), of which he was a leading author, including an assessment of the quantity of oil that reached the Nigerian Atlantic coastline, mechanisms by which the oil migrated inland, became stranded and was subsequently remobilised, and sources of oil pollution in the Niger Delta;
 - iv) Professor Nicolas Kalogerakis, a co-author of the EPE Report, Professor of Biochemical Engineering at the Technical University of Crete and expert in the protection and restoration of the marine environment from oil spills, including mangrove ecology, stranding of the oil, remobilisation and delayed migration upstream;
 - v) Dr Vassilios Mamaloukas Frangoulis, joint lead author of the EPE Report with Captain Bekas, an oceanographer and expert in oil spill response, including mangrove ecology, stranding of the oil, remobilisation and delayed migration upstream, and sources of oil pollution in the Niger Delta;

- vi) Professor Ernest Maduabuchi Ojukwu SAN, a Senior Advocate of Nigeria and a partner in the law firm Ojukwu, Faotu & Yusuf, who prepared reports on the Nigerian law of limitation and issue of authority;
 - vii) Chief Fedude Zimughan, a practising barrister and founder/principal partner/legal director of Fedude Zimughan & Co, with expertise in Nigerian customary law, who prepared reports on the issue of authority.
65. The court received reports and heard oral evidence from the following experts for the defendants:
- i) Dr Mervin Fingas, an environmental scientist specialising in oil spill properties and behaviour and the development of RadarSat, who provided his opinion as to the properties of Bonga oil, the behaviour of the oil spilled in the December 2011 Bonga oil spill, and the fate of that oil once spilled;
 - ii) Dr Deborah French-McCay, an expert in oil spill fate and modelling, principal developer of the physical fate models SIMAP (for oil) and CHEMMAP (for chemicals), which estimate oil and chemical distribution and concentrations over time after a release into fresh and saltwater environments, accounting for transport, dispersion, volatilisation, dissolution, and adsorption of chemicals in aquatic environments;
 - iii) Dr Simon Boxall, an expert on oceanography and hydrology, senior lecturer/principal fellow in physical oceanography and the senior tutor for the University of Southampton School of Ocean and Earth Science;
 - iv) Professor Norman Duke, Professorial Research Fellow at James Cook University Centre for Tropical Water and Aquatic Ecosystem Research, Queensland, Australia, a leading expert in mangrove ecosystems and oil spill impacts on mangroves, who has spent 49 years researching and teaching about mangroves, including 33 years' research into oil spill impacts on mangroves; he has written 276 peer-reviewed scientific publications about mangroves, 2 books, and has been cited in 17,681 published peer articles;
 - v) Dr Jon Burton, an environmental specialist with a PhD in contaminant hydrogeology and an expert on oil spill response, investigation and remediation;
 - vi) Professor James Bola Olaleye, an expert on mapping and geomatics, holder of a doctorate degree in surveying engineering from the University of New Brunswick, Canada, a professor of mapping and geoinformation, registered with the Surveyors Registration Council of Nigeria; he prepared a report on the location and surroundings of the Communities identified in the claimants' DODP;
 - vii) Babatunde Fagbohunlu SAN, a Senior Advocate of Nigeria and partner in the law firm Aluko & Oyebode, who prepared reports on the Nigerian law of limitation and the issue of authority.

66. The experts on each side were not matched precisely in area of expertise, and some of the experts on each side overlapped with others, either because they had prepared part of their evidence jointly or because they addressed the same topic from a different perspective. That is not surprising, given the specialist nature of the expert evidence required and the interplay of expert disciplines required to consider the behaviour of the Bonga Spill and its impact on the Communities. Happily, the court has the benefit of very clear and helpful joint statements from the experts, setting out their agreements and individual opinions on matters on which they disagreed:
- i) The Experts' Joint Statement dated 25 January 2022 on issues of modelling, oil spill on ocean, stranding, remobilisation, inland migration and onshore pollution ("the Oil Spill Joint Statement") prepared by Captain Bekas, Dr Mamaloukas, Dr Kalogerakis, Dr Sheard, Dr Fingas, Dr French-McCay, Dr Boxall and Dr Burton;
 - ii) The Experts' Joint Statement dated 4 February 2022 on the issue of mangroves ("the Mangroves Joint Statement") prepared by Dr Mamaloukas, Dr Kalogerakis and Professor Duke;
 - iii) The Experts' Joint Opinion dated 2 December 2021 as to Nigerian Law on the issue of authority ("the Authority Joint Statement") prepared by Professor Ojukwu, SAN, Chief Zimughan and Mr Fagbohunlu, SAN;
 - iv) The Second Joint Opinion dated 31 January 2022 as to Nigerian Law on the issue of limitation ("the Limitation Joint Statement") prepared by Professor Ojukwu, SAN and Mr Babatunde Fagbohunlu, SAN.
67. I am very grateful to the experts for their careful consideration of the expert issues and their co-operation in producing materials to assist the court to determine the date of damage and issues of Nigerian Law in this case. Likewise, I express my thanks to counsel on both sides for their clear and skilled cross-examination and submissions, and for their co-operation in ensuring that the hearing was conducted in a respectful and efficient manner.
68. The most significant issue for determination is Issue 2 – Date of Damage, which I consider first.

Issue 2 – Date of Damage

69. Issue 2 is defined by the parties as follows:

Assuming oil from the Bonga Spill reached the Nigerian shoreline, have the claimants shown that Bonga oil became trapped; remobilised years later; migrated upstream and inland; and impacted any of the Communities (as marked on the Communities Map) for the first time on the following dates:

- (a) Ogheye-Uton on or around 1 June 2014;
- (b) Abe-Bateren on or around 20 June 2014;

(c) Isuku-Gbene on or around 1 September 2015; and

(d) Tonbrapade-Gbene on or around 1-10 September 2015?

70. Issue 2 can be broken down into the following sub-issues raised by the parties in the DOD pleadings, namely:
- i) the quantity and state of any oil, from the Bonga Spill or other source, that reached the coastline in Delta and Bayelsa States, including the mouth of the Benin River, by around 28 December 2011;
 - ii) whether any oil that reached the coastline became stranded on the shoreline, the sea bed or in river estuaries by the process of sinking, sedimentation and/or overwashing and/or trapped in mangrove swamps;
 - iii) whether any stranded oil was subsequently remobilised by weather events and transported inland to the Communities;
 - iv) whether any such oil first impacted the locations of the claimants at: (a) Ogheye-Uton on around 1 June 2014; (b) Abe-Bateren on around 20 June 2014; (c) Isuku-Gbene on around 1 September 2015; and (d) Tonbrapade-Gbene on around 1-10 September 2015;
 - v) whether the only credible explanation for any oil pollution experienced in each of the Communities was the Bonga Spill, rather than other oil spills or leaks in the Niger Delta region, caused by crude oil theft, sabotage, illegal refining or otherwise.

Issue 2(i): Offshore migration of the Bonga Spill

71. At the beginning of the Oil Spill Joint Statement the experts state:

“For the purposes of the Date of Damage Hearing, the Court will be proceeding on the assumption that some oil from the Bonga Spill reached the Nigerian shoreline (and did so “*within weeks rather than months*” of the Bonga Spill). The question of whether oil reached the shoreline is therefore not an issue on which the Experts are required to present an opinion – it is taken as an assumption.”

72. Although the court is not required, as part of this Date of Damage hearing, to determine the Landfall Issue, it is necessary to consider the factual context in which the Bonga Spill occurred and the available evidence regarding the behaviour and fate of the oil as part of its determination of the other agreed issues. That requires consideration of the factors addressed by the oil spill experts, including: the volume of the Bonga Spill; dispersal of the oil before reaching the surface; emulsification of the oil; the effects of chemical dispersants and weathering; date by which any Bonga oil would reach the shoreline; locations and estuaries on the shoreline that the oil would reach; and volume and state of any Bonga oil that would reach the shoreline.

Volume of oil spill

73. The precise volume of oil spilled is not agreed. The claimants contend that at least 42,500 barrels were spilled; the defendants estimate that between 35,000-40,000 barrels were spilled. The experts agreed that the amount of oil spilled was substantial, and was 40,000 barrels or more.
74. Captain Bekas' opinion is that, although the volume of oil that originally escaped from the ruptured riser could not be established definitively, it was likely to be a multiple of the 40,000 barrels stated by the defendants. The basis for his opinion, having considered the MDA report which was not available to him when preparing his expert report, is as follows.
75. The satellite imagery of the Bonga Spill set out in the MDA report indicates that by 15:00 on 22 December 2011 the footprint of the oil on the ocean surface was 2,106 km². Aerial photographs of the oil slick by OSRL indicate a rainbow appearance, from which an average thickness of 4 µm (micro metres) could be assumed using the Bonn Agreement Oil Appearance Code, giving a minimum quantity of 53,000 barrels on the ocean surface at that time.
76. Captain Bekas deduces that the volume of escaped oil would be much more than 53,000 barrels, taking into account the time elapsed since the start of the spill and weathering. As postulated in the MDA report, assuming a net flow rate of 27 cm/s for the oil on the surface after the spill, and measuring the distance travelled from the location of the FPSO of 54 km for the north-eastern extent of the slick by 05:57 on 21 December 2011 (the time of the first image), the oil must have been in the water for approximately 55 hours rather than 18 hours, suggesting that the leak could have started approximately 1 ½ days earlier than reported.
77. Dr Fingas' opinion is that 40,000 barrels is an upper conservative estimate of the quantity of oil leaked. The MDA radar satellite image obtained at 05:57 on 21 December 2011 showed an oil slick with an area of 615 km² and the image obtained at 05:28 on 22 December 2011 showed that it had spread to an area of 1,550 km². The configuration of many oil slicks are believed to comprise thick oil covering 10% of the area and thin oil covering the remaining 90% of the area. Assuming a thickness of 3 µm for 10% of the area and 1 µm for 90% of the area, using the Bonn Agreement Oil Appearance Code, would give a volume of 30,000 barrels on the ocean surface at that time. Allowing for 25% evaporation, based on the time elapsed from the start of the oil spill of 18 hours, this would point to a maximum starting volume of 40,000 barrels.
78. Dr Boxall and Dr French-McCay are both of the view is that it is not possible to determine the volume of oil spilled from the satellite and airborne data and it is not necessary to do so for the purposes of their expert evidence. The difference between SNEPCo's estimate of 40,000 barrels and the estimate of 42,500 barrels in the EPE report (based on calculated surface area of the oil spill and assessed average thickness) is small and immaterial to their opinions on the fate of the oil.
79. I consider that the estimate of approximately 40,000-42,500 barrels, used by the parties and their experts as the likely volume of the initial oil leak, is appropriate for the following reasons.

80. Firstly, a mass balance calculation carried out by SNEPCo and the Department of Petroleum Resources (“DPR”) following the spill indicated that the discrepancy between the quantity of oil transferred by the FPSO and received by the vessel was 40,000 barrels, as stated in the DPR internal memorandum dated 6 January 2012. This was an increase from the earlier reported quantity of 35,000 barrels in the PIA report (which latter report, therefore, I discount on this issue).
81. Secondly, other than a mass balance calculation as referred to above, there is no alternative measurement, calculation or assessment that could determine the precise volume of oil leaked. In their joint statement, the experts agreed that the amount of oil spilled was substantial and was 40,000 barrels or more. The foundation of the expert modelling, assessments and calculations by all the experts in their reports was based on that, or similar, estimate and no significance attaches to the minor differences initially between them as to the exact amount that reached the surface.
82. Thirdly, although I appreciate that Captain Bekas did not have access to the MDA report or the full radar satellite imagery until service of the defendants’ evidence, I consider that he has reached unjustified conclusions from the likely area of the oil slick as suggested in that report.
83. The area of the oil slick used by Captain Bekas of 2,106 km² at 15:00 on 22 December 2011 was not a calculation from a radar satellite image; no full image was available for that time; rather, it was an assessment by MDA based on an assumption that the surface area rate of change of 39km²/hour that occurred between the first image captured at 05:57 on 21 December and the image captured at 05:28 on 22 December, continued until 15:00 on 22 December, so as to give the maximum spatial extent of the oil by that date.
84. The EPE model indicated that the oil would reach the surface within eight hours of the spill and, although it is likely that some smaller oil droplets would remain suspended in the water and surface later, there is no explanation for any mechanism that would give rise to a substantial increase in the quantity of oil that would reach the surface days later.
85. More significantly, it does not follow that an increase in surface area was accompanied by an increase in volume. As explained by Dr Fingas in his report, after an oil spill on water, the oil tends to spread into a slick over the water surface, in particular, as in this case, where the oil is a lighter crude oil. MDA was not concerned with calculating the quantity of oil; it merely noted the surface area. It is likely that any further surface area spread would be accompanied by a corresponding reduction in thickness, as assumed by Dr Fingas in his report.
86. Fourthly, Captain Bekas used an assumed figure for thickness of the oil that was too high. Both Captain Bekas and Dr Fingas used the Bonn Agreement Oil Appearance Code to assess the thickness of the oil slick for the purpose of calculating the volume of oil on the surface of the water:

Code	Description-Appearance	Layer Thickness Interval (µm)	Litres per km ²
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1	Sheen (silvery/grey)	0.04 to 0.30	40-300
2	Rainbow	0.3 to 5.0	300-5,000
3	Metallic	5.0 to 50	5,000-50,000
4	Discontinuous True Oil Colour	50 to 200	50,000-200,000
5	Continuous True Oil Colour	>200	>200,000

87. Both experts described the oil as “rainbow” in appearance but Dr Bekas selected an average thickness of 4 μ , almost at the top of the range for code 2. In cross-examination, Dr Bekas agreed with the description by Dr Fingas in his report, namely, that:

“Slicks at the onset are always composed of thin and thick slicks like a fried egg. The thick portion, usually 10% is of various thicknesses but usually about 3 μ .”

If the lower thickness values used by Dr Fingas were adopted, it would reduce the estimated volume of oil initially on the surface to approximately 30,000 barrels.

88. Fifthly, the increased timeline of oil leakage postulated by MDA in its report, based on an assumed advection rate, is an unlikely scenario against the available evidence. An ENVISAT radar satellite image obtained on 18 December 2011 showed no evidence of any oil spillage in the vicinity of the Bonga FPSO. The Cargo Logs indicate that no loading started until 16:00 on 19 December 2011. Although small droplets of oil might have escaped from oil in the riser prior to loading, no material leak could have started prior to the flow of oil and application of pressure in the flowline.

89. Finally, my finding is expressed as a range of figures because of the uncertainty as to the rate of evaporation. Although Dr Fingas allowed for 25% evaporation during the first 18 hours after the spill, in his report he noted that this was lower than the rate of 30% evaporation generally seen. If a higher rate of evaporation of 30% were used, that would indicate a higher starting amount of oil of approximately 42,500 barrels, the figure assumed by EPE in its model.

90. The available evidence indicates that the Bonga Spill was substantial, amounting to approximately 40,000-42,500 barrels. Although an approximation, the precise amount of oil spilled is not material to the date of damage issue to be determined by the court.

Dispersal of oil before reaching the surface

91. The issue is whether, and to what extent, any volume of the Bonga oil would have dispersed as it travelled from the ruptured riser at a depth of around 360 metres towards the ocean's surface at the point of spill.
92. Dr Bekas used prediction tools, GNOME/ADIOS and MIKE 21/3, to model the oil release over a period of 6 hours (between 02:20 and 08:20) on 20 December 2020. For the purpose of modelling, the volume of leaking oil of 42,500 barrels was divided into 6,984 oil particles, each of 877kg with Bonga oil properties. The discharge was modelled as a steady release of the particles into the jet flow in batches of 97 particles over 72 simulation time steps. The simulation indicated that the oil components gradually ascended to the surface depth-zone by 10:20 on 20 December 2011 (over a period of about 8 hours). The amount of oil lost in the water column through natural dispersion was insignificant in both models (between 75 and 150 barrels) and his estimate is that no more than 200 barrels were lost through this process.
93. Dr French-McCay used algorithms and models commonly relied on for subsurface modelling of well blowouts, pipeline releases and other deep water hydrocarbon releases (including the model to which she contributed, described in academic papers *Li et al 2017*), for estimating oil droplet size distribution based on the oil's exit velocity from an orifice (volume flow rate divided by area of the orifice), oil properties (density, viscosity and interfacial tension), and Stokes law for calculating rise times of oil droplets. Her assessment is that the Bonga oil rose to the surface in the form of small droplets. According to Stokes Law, an oil droplet rises in sea water at a rate determined by the density difference between the oil and the water (oil being of lower density, and so buoyant) and their size (sphere diameter). Larger droplets rise faster than smaller ones, particularly as the soluble compounds dissolve faster out of the smaller droplets, increasing their density and further slowing their rise. As the droplets rise through the water column, they are transported by the ambient currents, dispersing the oil in the water.
94. Dr French-McCay estimates that the larger droplets surfaced near the source of the leak within less than 4 hours. The smaller droplets surfaced farther from the source of the leak, over a period of up to about 11 hours, during which they would experience some weathering, mainly by dissolution. She considers that some droplets would remain suspended by natural turbulence in the ocean and would never surface.
95. Dr Boxall's assessment is that an amount greater than the 200 barrels estimated by Captain Bekas would be lost through natural dispersion. He considers that the uniform particle size used in the EPE model was too large and the vertical eddy diffusivity (the degree to which the oil and water would mix through turbulence of the plume) used was too low. In particular, the model did not allow for any vertical eddy diffusivity despite the strong vertical flow caused by the rising plume of oil and water and the strong vertical gradients in the oil components. Therefore, the EPE model did not accurately determine the amount of oil suspended in the water column in its journey to the surface.
96. I find Dr Boxall's explanation persuasive. Captain Bekas agreed in cross-examination that zero vertical dispersion was chosen in the model. Although he clarified in re-examination that this value was derived from the turbulence flow determined by the hydrodynamic model, he did not challenge as a matter of principle the explanation

given by Dr Boxall, or refute the criticism that the input figures, such as the selected size of the oil particles, were incorrect.

97. The modelling carried out by the experts indicates that the oil would have escaped from the ruptured riser and ascended to the surface over a period of up to 8-11 hours. It is common ground that there would have been some dispersion and dissolution of the oil particles as they ascended to the ocean surface. None of the experts had sufficient data to carry out a precise recreation of the Bonga Spill or calculate the precise volume of oil dispersed as it travelled to the surface and it is not necessary for the court to determine this issue. I find that the EPE model underestimated the amount of dispersion of the oil for the reasons given by Dr French McCay and Dr Boxall summarised above.
98. However, I accept as valid the observation of Captain Bekas that, regardless of the calculations by the experts, the radar satellite imagery set out in the MDA report confirms that substantial quantities of oil from the Bonga Spill reached the ocean surface. This is the best evidence available to the court as to the amount of oil that was dispersed before, or shortly after, it reached the surface.
99. As explained above, based on the assessed area and thickness of the oil from the radar satellite imagery and photographs, the amount of oil that was on the surface by 21 December 2011 was in the region of 30,000 barrels. The radar satellite imagery also confirms that, having reached the surface, the oil continued to spread across an expanding surface area.

Emulsification

100. There is a dispute between the oil spill experts as to whether Bonga oil would readily emulsify, taking into account its composition. Emulsification is the process by which one liquid is dispersed into another in the form of small droplets. Water-in-oil emulsions are formed when sea energy forces small water droplets into the oil; if the oil droplets are viscous, the water becomes trapped inside, stabilised by asphaltenes and resins in the oil. The agreed 'informal scientific description' of such emulsions by the experts is 'chocolate mousse'. Emulsification substantially increases the volume of the oil and can increase its viscosity, in turn restricting evaporation and increasing the difficulty of dispersal, or recovery using skimmers.
101. Captain Bekas' opinion is that the oil underwent rapid and significant emulsification into a mousse, based on the GNOME/ADIOS model, which calculated on average over 85% water uptake, whilst the MIKE 21/3 model indicated an average maximum water uptake of 31%. Given the presence of asphaltenes, resins and their ratio, he considers that the oil formed light emulsions of mesostable to unstable state. In cross-examination, he agreed that such emulsions would be relatively easy to break down.
102. Dr Fingas' opinion is that the viscosity of Bonga oil is too low to form any stable emulsion. The essential ingredient in water-in-oil emulsions is about 5% to 10% asphaltene content but Bonga oil contains only about 0.1% asphaltenes. Therefore, it was highly unlikely that Bonga oil would form any water-in-oil emulsions.
103. Dr French-McCay's opinion is that the composition of the oil, very low asphaltene concentration, was such that water-in-oil emulsions could not form until considerable

weathering and loss of most of the lighter compounds occurred, leaving a concentration of asphaltenes. Further, the nature of the release, whereby the oil was dispersed as oil droplets into the water, spreading before it surfaced, kept the Bonga oil from forming water-in-oil emulsion/mousse because the oil was too thinly spread.

104. She criticised the EPE model on the basis that the maximum water content the oil could hold was selected in the model as an input of 80%, as confirmed by Dr Bekas in cross-examination, which predicted water uptake based on that assumption. Dr French-McCay's evidence was that such assumption would be typical of heavy crudes and fuel oils with high asphaltene contents but inconsistent with the low asphaltene content in the Bonga oil. EPE's model input assumption that the uptake of water in the Bonga oil could be up to 80%, and therefore had a high emulsifying potential, resulted in simulated oil that rapidly incorporated water and increased dramatically in viscosity.
105. Dr Mamaloukas agreed with Dr French-McCay's view that the Bonga oil, with very low asphaltenes is more consistent with a non- or low-emulsifying oil and therefore, would be less likely to form water-in-oil emulsions and be more amenable to natural dispersion forces and dispersant application. He agreed that Bonga oil has a low asphaltene content of 0.1% and that if there are no asphaltenes or very limited asphaltenes in the oil, the emulsification after a spill would be lower.
106. It follows that there is consensus among the experts that Bonga oil has a low asphaltene content and, therefore, is very unlikely to emulsify or form a stable emulsion. The EPE model included an input that assumed, wrongly, water uptake by the oil of up to 80%, thereby over-estimating its ability to form an emulsion. The aerial surveillance photographs indicated that the oil on the surface appeared as sheens over a wide area, rather than a dark, thick mass, save for the darker area of oil seen on 24 December 2011, which the defendants contend could be a third party spill. There is no other evidence indicating any significant emulsification of the oil. On that basis, I find that the Bonga oil did not emulsify to any material extent.

Chemical dispersants and weathering

107. Captain Bekas' opinion is that the EPE calculations, based on the results of GNOME/ADIOS, various scenarios modelled, and on the basis of the other factual evidence, indicates that the dispersants were of moderate (on 22 and 23 December 2011) to marginal (on 24 December 2011) effectiveness.
108. Dr Mamaloukas expresses the view that the window of opportunity for dispersants to be effective ended by 23 or 24 December 2011 because of the change in viscosity of the oil from weathering by that stage. Overall, EPE assess that the effectiveness of the dispersants would not have exceeded 20-30% of the oil slick, on a conservative estimate leaving 27,000 barrels remaining on the sea surface.
109. Dr Fingas' opinion is that the application of dispersant removed much of the free oil on the surface, adding to evaporation and other removal processes. The total amount of dispersant applied of 127,700 litres was sufficient to disperse 10,600 barrels of oil.
110. Dr French-McCay's opinion is that based on the properties of the Bonga oil and modelling of its weathering at sea, the viscosity of the oil would not exceed 10,000

centiPoise (cP), the point at which dispersants would cease to be effective, and most of the oil would not exceed 1,000 cP because it would not have emulsified. Based on these viscosities, she would expect dispersant application to be effective in dispersing the oil.

111. Dr Fingas set out in his report a calculation, based on the chemical properties of Bonga oil, indicating a slight increase in viscosity with weathering. On that basis, he considers that, although chemical dispersants are most effective in the first two days after an oil spill, they would continue to be effective thereafter on Bonga oil. In cross-examination, Dr Fingas accepted that his calculations of the fate of the oil used an average of the application of chemical dispersants over time, rather than the precise figures for each day (which were not available), but the overall impact would not be significantly different.
112. EPE developed its oil spill simulation model with a hydrodynamic flow model to analyse the fate (chemical and physical changes) and trajectory of the oil spill. I accept that the EPE model produced results that were generally consistent with the MDA radar satellite images and aerial surveillance photographs in predicting the trajectory of the oil mass towards the Atlantic shoreline and then northwards. Against that, must be balanced the evidence that the model could not, and did not, accurately predict the precise trajectory and fate of the Bonga oil. The initial volume of the oil spill was approximately 40,000-42,500 barrels, as initially agreed by the experts, used in the EPE model, and as I have found for the reasons set out above.
113. However, there are flaws in the model as used in this case. First, the model assumes a greater degree of emulsification than was likely, given the composition of the Bonga oil, in particular, the low asphaltene content. As a result, it over-estimates the viscosity of the oil, which affects the rate of natural dispersion. Second, it makes no allowance for chemical dispersion, contrary to the OSRL evidence. Third, it assumes no weathering of individual molecules within the model. I find that these factors have led to the EPE model over-estimating the amount of oil remaining on the surface as it approached the coastline.
114. It is clear from the radar satellite images and photographs that by 22 December 2011 the leading edge of the oil slick exhibited feathering, indicating expedited weathering of some parts of the oil. Examination of the aerial photographs in the OSRL report indicate that by 24 December 2011, following the application of chemical dispersants, the oil showed signs of significant dissipation. However, it is also clear that the application of chemical dispersants did not succeed in dissipating the entire amount of oil on the surface, as evidenced by the radar satellite images and recorded in the OSRL report.

Date by which any Bonga oil would reach the shoreline

115. The issue whether the Bonga Spill reached the shoreline is not agreed. It is common ground that at least 40,000 barrels of Bonga oil leaked from the FPSO and that the oil slick travelled in a north-east trajectory from the FPSO towards the Nigerian Atlantic shoreline. The claimants' case is that the defendants' alleged efforts to contain and disperse the Bonga Spill at sea were unsuccessful and very substantial quantities of oil impacted the shoreline. The defendants' case is that all or most of the Bonga oil dissipated, naturally or through the use of chemical dispersants, avoiding landfall; the

source of any oil that reached the shoreline during this period was a third party spill from an unknown source, the Mystery Spill.

116. The suggestion that there was a Mystery Spill was raised as a possibility in the MDA report, based on ambiguity in the radar satellite image obtained on 24 December 2011. That image detected increased suppression of the ocean surface roughness in a significant area of the oil; this was counter-intuitive given that by 24 December 2011 the Bonga oil had been in the water for approximately 90 hours, by which stage the effects of weathering and/or dispersants should have led to less attenuation of the ocean surface roughness and hence an increased radar response.
117. The claimants' position is that there is no evidence of any other oil spill at the relevant time that could explain an oil slick on the surface of the ocean in the same place and at the same time as the Bonga Spill. The defendants' position is that a third party spill is the only plausible explanation for the sudden increase in volume and thickness of the oil slick at that time.
118. As explained above, it was decided that issues of causation, including the Landfall Issue, would not form part of this Date of Damage Hearing. As a result, although both sides have alluded to it in their evidence and submissions, the court has not heard full evidence on this issue. In any event, it is not necessary to resolve this issue to determine the date of damage. Leaving aside the issue whether Bonga oil, rather than any Mystery Spill, in fact impacted the shoreline, there is no material dispute as to the date on which the oil would have reached the shoreline.
119. Captain Bekas' opinion, based on the EPE prediction model, is that the oil spill impacted the Niger Delta shoreline from the early morning hours of 25 December 2011, landing upon the beach area close to the villages of Orobiri I and Orobiri II in Ekeremor LGA, in Bayelsa State, between the Dodo and Ramos Rivers. The oil spread north under the conditions of the prevailing coastal environment (currents, waves and tides), contaminating the shoreline and the estuaries of the Burutu, Warri Southwest and Warri North LGAs in Delta State, up to the Benin estuary, until about 28/29 December 2011. He relies on the MDA radar satellite imagery and aerial surveillance photographs by OSRL as corroboration of the model results.
120. Dr Boxall's opinion is that any Bonga oil would have reached the coast by 25 or 26 December 2011 but there is evidence from the data and images that the oil was advected parallel to the coast by longshore currents and, as a result, it did not make contact with the shoreline.
121. Dr Fingas agrees that the radar satellite imagery following the Bonga Spill shows the oil slick approaching the coastline by 26 December 2011 but, because there is no response signal at the shoreline, that data does not show whether the oil made landfall.
122. Dr French-McCay considers that any oil that reached the shoreline would have done so after a minimum of seven days, i.e. 27 December 2011 at the earliest, although she agreed in cross-examination that the oil was dangerously close to the shore by 24 December 2011.
123. The Bonga Spill response logs contain a contemporaneous record of oil reaching the Ramos River mouth/beach and the Okuntu water front and adjoining creeks on 25

December 2011. This is probably the most reliable indicator that some oil, whether Bonga oil or the Mystery Spill, reached the shoreline during the period between 25 and 28 December 2011.

The locations and estuaries on the shoreline that the oil would have reached

124. Dr Bekas relies on the EPE model, which predicted that the Bonga Spill would reach the shoreline between the Dodo River and the Ramos River in Bayelsa State, before travelling north to the Forcados River, the Escravos River and the mouth of the Benin River. His view is that this is confirmed by the MDA radar satellite imagery, the aerial surveillance photographs by OSRL and soil samples taken near the Pennington River, considered by Fugro to be a match for Bonga oil.
125. Dr Fingas' position is that the GNOME modelling shows that the trajectory of the Bonga Spill was to the east from the Bonga FPSO, initially towards the coast between the Forcados/Warri River and the Ramos River but was directed north by the longshore current, as confirmed by the MDA radar satellite imagery.
126. Dr French-McCay explains in her report that because winds and currents are the primary drivers of oil transport at this scale in open waters, currents moved the bulk of the oil in a north-east direction. However, the radar satellite imagery showed that ocean currents to the west of the Bonga FPSO split near the FPSO so that oil surfacing north of the FPSO moved in a north-east direction, oil surfacing at the latitude of the FPSO continued eastward, and oil surfacing south of the FPSO moved in a south-east direction, stretching the surface area of the oil and shearing off a section from the southern portion. Her model trajectory indicated that oil would have approached the shoreline near the mouths of the Forcados and Ramos Rivers and also towards the shoreline near the Dodo River but northward nearshore flows would have moved the oil toward the north as it approached the coast.
127. Dr Boxall notes that the limited available data, primarily a study carried out in July and August 2000 by Awosika and Folorunsho, "*Oscillating Surface Current Patterns Offshore the Western Niger Delta Nigeria: Implications for Oil Spill and Nutrient Transport*," suggests that whilst the surface layer (top 2-3 metres) might be primarily wind driven towards the coast given onshore winds, near surface (below 3 metres) flow tends to be along shore and progress towards the coast is much slower. He observes in his report that this is consistent with the general direction and offshore position of the oil spill produced by the EPE model. His opinion is that the combination of strong alongshore currents in the coastal region and the slow net outflow of the estuaries would have impeded any oil contaminated water from moving into the estuaries.
128. I have considered the available physical evidence of oil contamination along the coastline at the material time. Dr Sheard and Dr Ward were joint authors of the Brookes Bell report, which contains their opinion on the sample analysis and oil fingerprinting considered in the Fugro Report. The Fugro report states that between 10 January 2012 and 9 February 2012, Fugro received 69 water, soil and free oil samples that were said to be collected from various locations off-shore and from the Nigerian coast line in December 2011 and January 2012, identified as:

- i) 10 offshore Bonga Spill oil and impacted water samples (A02-A12);
- ii) 19 crude oil samples and 4 soil samples from the Bayelsa and Delta shoreline (B01-B23);
- iii) 8 soil samples and 5 water samples from the mouth of the Forcados River (C01-C13);
- iv) 7 soil/sand samples and 10 water samples from around the Dodo River (D01-D17);
- v) 3 soil samples and 2 water samples from the Pennington River, south of the Dodo River (E03-E07); and
- vi) a sample from the port side of the FPSO (E02).

Three samples of export grade crude oil originating from off-shore Nigeria were supplied for comparison purposes, namely, Bonga crude oil (sample A01), Bonny Light crude oil (sample E01) and Forcados Blend crude oil (sample E08).

129. The forensic methodology adopted by Fugro for characterising and identifying the source of the oil in the samples was that set out in Part 2 of the protocol published by the European Committee for Standardisation (“CEN”), an internationally recognised body: CEN/TR-15522-2. Gas chromatography (“GC”) was used to provide a detailed analysis of hydrocarbon components within the samples, using GC with flame ion detection (“GC-FID”), followed by GC with mass spectrometer detection (“GC-MS”).
130. Dr Ward agreed in cross-examination that there appeared to be deviations from the protocol recommendations as to the GC-FID instrument conditions but, as he explained, the GC-FID analysis is used simply to pre-screen samples so as to eliminate them from the tier two analysis; in this case, all samples were analysed using the tier two GC-MS technique in accordance with the protocol and therefore the apparent deviations had no impact on the outcome of the analysis.
131. Diagnostic ratios were calculated using data from the gas chromatography mass spectrometer for each sample and compared against the reference samples. If a ratio pair had a difference of more than 14%, they were considered not to match; if they had a difference of below 14%, they were considered to be a match. Fugro identified the following matches with Bonga oil:
 - i) A02-A05, A07-A10 and E-02 – Bonga Spill oil and impacted water samples;
 - ii) B01-B10, B15-B23 – crude oil samples;
 - iii) B11, B13 and B14 – coastline soil samples;
 - iv) D01, D02 –soil samples from Biasangbene, around the Dodo River;
 - v) D17 – Ramos River water sample;
 - vi) E04-E05 – soil samples from Ezetu, around the Pennington River.

132. Fugro identified the following non-matches with Bonga oil:
- i) A06 – impacted water sample;
 - ii) B12 – coastline soil sample;
 - iii) C01-C13 – soil and water samples around the Forcados River;
 - iv) D03-D12, D14-D16 – soil and water samples from around the Ramos and Dodo Rivers;
 - v) E03, E06, E07 – water and soil samples from around the Pennington River.
133. Dr Sheard and Dr Ward eliminated from the results obtained by Fugro samples that were considered to be too weathered to produce a reliable result but confirmed matches to Bonga oil in the following samples:
- i) A07, A10 and E-02 – Bonga Spill oil and offshore water samples;
 - ii) B01, B03-B09, B15-B23 – crude oil samples;
 - iii) B13 and B14 – coastline soil samples;
 - iv) D01, D02 – Dodo River samples.
134. In cross-examination, Dr Ward agreed that the Fugro results indicated some anomalies, such as samples collected in the same region producing different results, some that were identified as a match and others identified as a non-match to Bonga oil. He explained that he did not have access to the Fugro raw data so as to investigate but agreed that they required further explanation. He also agreed that there were apparent discrepancies as to labelling and dates of samples but he did not consider that this would necessarily mean that the results were unreliable. I accept his evidence that outliers and anomalies do not necessarily invalidate the results or undermine any conclusions drawn from those results.
135. Of greater concern to the court is the uncertain provenance of the samples, in particular the 'B' crude oil and soil samples. A number of the sample descriptions in the Fugro report contained sets of coordinates, which Dr Sheard and Dr Ward assumed were references to the sampling sites and which they used to identify the approximate locations of the same. These were confined to a number of the A, C, D and E samples. However, they were unable to provide even approximate locations for the B samples because no coordinates were identified. From the descriptions in the Fugro tables, they assumed that: samples B01-B05, B07-B09, B11, B13, B14, B18 and B20 were collected from communities within the Ekeremor LGA in Bayelsa State; samples B06, B10, B15-B17, B19, B22 and B23 were collected from within the Burutu LGA within the Delta State; sample B07 was taken from Agge; and samples B03 and B08 were taken from Orobiri, in Bayelsa State.
136. However, the spill response reports contained in emails by Chukwuka Njoku of SPDC indicate that difficulties were encountered when Fugro attempted to collect samples following the Bonga Spill:

- i) The reports for 24 and 25 December 2011 stated that baseline sampling by Fugro was ongoing and that 4 out of 11 samples had been acquired.
 - ii) The report for 26 December 2011 stated that the samples collected were confiscated by Community representatives and sampling by Fugro was discontinued due to harassment by the Community.
 - iii) The report for 27 December 2011 stated that 5 mystery oil samples arrived at Warri from the Forcados oil terminal for dispatch to the Fugro laboratory in Port Harcourt. Sampling by Fugro remained suspended pending agreement with the Communities.
 - iv) The report for 28 December 2011 stated that oil samples were sent to Port Harcourt, collected from identified locations that it is possible to cross-refer to the samples analysed by Fugro: (1) co-ordinates for offshore water sample A08; (2) co-ordinates for offshore water sample A07; (3) & (4) Ramos River mouth at Agge, which could include water sample A10; and (5) Okuntu/Isiagbene water front which appears to be crude oil sample A09.
 - v) This report also stated that one oil sample and three soil samples were collected at Orobiri, which could include samples B03 or B08, B13 and B14.
 - vi) The report for 28 December 2011 further stated that Community leaders demanded that the JIV team accept samples the Community had previously collected but without any details as to when or where the samples were taken, or the person(s) who collected the same. The descriptions of these samples appear to correlate to Fugro samples B09 to B21. Sampling by Fugro remained suspended.
137. Dr Ward agreed in cross-examination that the CEN protocol stipulates that there should be an unbroken chain of custody between field samples and the laboratory analysis in order to produce reliable results. Unfortunately, for reasons beyond its control, Fugro was prevented from collecting the oil, soil and water samples in accordance with the CEN protocol. It is unsurprising in those circumstances that, not only did the Fugro report not address the methodology used for sampling, labelling, documenting, packing, storing and transporting the samples to Fugro for analysis; it did not identify who carried out the sampling or produce any documents evidencing the process.
138. No criticism can be made of the Brookes Bell report; the analyses carried out were transparent and scientifically robust in respect of the documented data. However, Dr Ward and Dr Sheard did not carry out any part of the sampling exercise and therefore are unable to assist the court on this critical issue of provenance. No factual witnesses were called to verify the locations from which the samples were assumed to have been taken. No contemporaneous documents have been produced to substantiate the assumed source of the samples, most of which were crude oil. It follows that there is no credible evidence before the court that the samples analysed by Fugro, and considered by Dr Sheard and Dr Ward, were taken from the locations identified in the Fugro or Brookes Bell reports.

139. In those circumstances, the only sensible conclusion that the court can draw is that the soil and oil sample results are not a reliable source for the purposes of determining the locations impacted by oil that reached the shoreline or the amount of such pollution.
140. Against that finding, I turn to consider the expert evidence on this issue.
141. First, as observed by Dr Boxall, the EPE model shows the general trajectory of the oil spill that is consistent with an academic study carried out by Awosika and Folorunsho, based on measurements of current flow and winds.
142. Second, the EPE model is not reliable as to the precise locations that would have been impacted by the oil. Dr French-McCay demonstrated that the EPE model over-estimated the speed and volume of oil approaching the coast, through her overlay of the EPE model projection on the MDA radar satellite imagery for 24 December 2011. The EPE model predicted a large, homogenous mass of oil almost touching the coastline at Orobiri, by 24 December but the radar satellite image for that date showed the oil broken up with trailing sections and very close but further offshore.
143. Third, the radar satellite imagery is not capable of showing whether or not oil impacted the shoreline, estuaries or rivers as explained above. I note that the radar satellite image for 18 December 2011, prior to the Bonga Spill, shows what appears to be a calming effect at the mouths of the rivers, similar to that seen on the image for 26 December 2011. Thus, the dark areas of the image for 26 December 2011 are not evidence of oil at the shoreline or in the estuaries. However, it is evident from the radar satellite imagery that the oil is very close to the shoreline by 24 December 2011. On that basis, it is possible that in the days that followed some oil made landfall despite the longshore current, driving the oil north rather than east towards the coastline.
144. Fourth, the EPE model was designed as a predictive tool for the ocean and coastal areas but not the rivers or inland and not beyond 28 December 2011; in particular, it did not adequately evaluate the transport of oil near the coast and in the estuaries because it did not consider freshwater outflows from the rivers, appropriate circulation in the estuaries or the complex network of rivers and streams inland of their model boundary, such that tidal currents in the estuaries were not realistic.
145. Captain Bekas agreed in evidence that the oil spill modelling conducted by EPE is applicable only to the week after the spill occurred and only in the open ocean waters for the purpose of their oceanic hydrodynamic modelling:

“Q. Your model only lasts until a week or so after the spill, it doesn't do anything after that, it doesn't assess anything, it doesn't predict anything after that date?

A. This model is an offshore, this model simulates the movement and the fate of the oil particles until they reach the boundaries of the simulation domain.

...

Q. Which is a week or so after the spill?

A. Yes.

...

Q. So the model only takes you so far, it doesn't show you anything about movement up the coast does it?

A. Of course not.

Q. And it doesn't show you anything about movement inland?

A. Of course not.

Q. So you model to the shoreline and that's it? It doesn't model into the rivers and the estuaries?

A. ... The modelling of the estuaries is far more complex. So we have left open just the estuaries, the boundaries of the Forcados estuary, and we have implemented the necessary boundary conditions in order to simulate the effects. But these effects are applicable only to the area that is close to the mouth of the estuary. But further inland you need separate models.

...

Q. You have not produced separate models?

A. No."

146. Fifth, the water, soil and crude oil samples relied on by EPE as corroborative evidence of oil contamination at the shoreline, in the estuaries and in rivers, analysed in the Fugro report, are not reliable for the reasons set out above. The samples said to be taken from around the Ramos, Dodo and Forcados Rivers were not a match for Bonga oil; the samples relied on by Captain Bekas in the joint statement, from the Pennington River, were not verified by the Brookes Bell report; and the provenance of the coastal oil and soil samples, which were a match for Bonga oil, is not established.
147. Sixth, there is photographic evidence of oil contamination, whether Bonga oil or an unknown third party spill, at points along the Bayelsa and Delta shoreline in late 2011 and early 2012, as set out in the SPDC oil spill clean-up report referred to above. Dr Fingas agreed in cross-examination that oil, whether Bonga oil or the Mystery Spill, hit the shoreline in late December 2011/early January 2012, although his view is that little, if any, oil was beached.
148. Seventh, there is no similar photographic evidence of oil contamination in the estuaries or rivers along the Bayelsa and Delta coast. There are no reliable samples showing the presence of oil in the estuaries or rivers. This is consistent with the assessment of Dr Boxall that the outflow of fresh water from the rivers and the longshore currents would prevent any oil from entering the same.

149. Eighth, there is no photographic evidence and no crude oil, water or soil samples, indicating any oil contamination at the mouth of the Benin River or around the estuary during this period.
150. Drawing together the strands of evidence on this issue, I find that oil, whether Bonga oil or other third party oil spill, reached the stretch of shoreline between the Dodo River and the Forcados River by late December 2011. There is evidence of oil contamination along the Delta and Bayelsa shoreline during or shortly after this period but no evidence of oil contamination at the mouth of the Benin River, or in any of the estuaries or rivers flowing into the ocean along this part of the coastline.

Volume and state of oil that would have reached the shoreline

151. Captain Bekas now calculates that a minimum volume of 25,000 barrels of oil must have impacted the shoreline and the estuaries. This is a material increase in the volume of oil calculated initially, 15,000 barrels, set out in the EPE report:

“According to the simulation results, a total amount of approx. 2,042,316 kg (approx. 15,000 barrels/bbl) of heavy fuel oil have impacted the Niger Delta shoreline up until early afternoon hours of 28.12.2011, out of which approx. 1,961,530 kg (approx. 14,000 barrels/bbl) were stranded on the coast while another 80,786 kg (approx. 6,000 bbl) sedimented on the shallow waters near the coast. From the total amount of oil stranded on the shoreline (15,000 bbl), approximately 2,044 bbl has initially impacted the involved rivers estuaries. The Bonga oil pollution covers more than 100 km in the coastline of Bayelsa and Delta States, stretching out from the Dodo river estuary until the South of Benin river estuary.”

152. Dr Boxall disagrees with these estimates. His opinion is that the longshore currents would take much of the oil along the coast, dispersing it in the water column to break down, rather than onto the shoreline. He makes a powerful point that the volume of oil assessed by Captain Bekas as hitting the coastline would not be hidden with ease; it would be very visible. None of the photographs before the court is consistent with the levels of contamination that would be expected if 15,000 barrels of oil, or more, arrived at the shoreline as suggested by the claimants. In particular, there is no evidence to support the theory that approximately 2,044 barrels of oil impacted the estuaries of the rivers along this stretch of coastline.
153. The experts agree that the Bonga oil would have experienced weathering, by evaporation, dispersion, dissolution, oxidation and biodegradation. They also agree that the oil would have been weathered by the time it came ashore. The EPE model estimated that by 28 December 2011 46.5% of the oil would have evaporated; Dr French-McCay estimated 45%, a negligible difference. She agreed with the EPE model estimate that less than 1% of the semi-soluble compounds would remain by that date.
154. Captain Bekas’ opinion is that the oil that reached the shoreline, as predicted in the EPE model and in accordance with the Fugro analysis of collected samples, was weathered crude oil. Evaporation was the major weathering process; the volatile

fractions would have been largely dissipated, as well as a significant amount of semi-volatile fractions. Heavy fuel oil fractions, asphaltenes and waxes remained largely unaffected.

155. Dr French-McCay agrees with Captain Bekas that any oil arriving at the shoreline would be highly weathered oil residuals but her opinion is that most of the toxic components would be weathered away. It would not have been a slick by the time it reached the coast based on its weathering state and the significant natural dispersion that had occurred. In addition to evaporation, biodegradation would have removed another 8% of the oil volume, in contrast to the very low biodegradation rates assumed by EPE in the model. Residual oil is comprised of heavy fuel oil fractions, asphaltenes and waxes. Polycyclic aromatic hydrocarbons (PAHs) are semi-volatile and semi-soluble components of oil that are toxic but more than 99% of the PAHs would have been lost through evaporation by 28 December 2011.
156. In cross-examination, it was put to Dr French-McCay that the chemical composition of oil that reached the shoreline could be established from the Fugro report but, for the reasons set out above, I reject the Fugro results as reliable given the uncertainty and lack of transparency of the sampling exercise.
157. As set out above, I have found that approximately 30,000 barrels of oil reached the surface of the ocean by 21 December 2011. It is common ground between the experts that about 46% would be lost by evaporation. I have concluded that the application of chemical dispersants would be effective in dispersing a further, substantial volume of the oil. I accept Dr French-McCay's estimate that about 8% of volume would be lost through biodegradation. On that basis, it is clear that the volume of oil arriving at the shoreline would be much smaller than predicted by EPE and would be highly weathered. This conclusion is supported by the highly weathered oil depicted in the radar satellite imagery obtained on 27 and 28 December 2011.

Conclusion on the trajectory and fate of the oil

158. It is not possible for the court to reach a concluded view as to the precise quantity and state of any oil, from the Bonga Spill or other source, that reached the coastline in Delta and Bayelsa States by around 25 to 28 December 2011.
159. The EPE experts have been hampered by the absence of reliable, contemporaneous evidence demonstrating the volume and state of oil reaching the shoreline and the absence of any such evidence identifying the precise locations along the coastline affected by oil contamination shortly after the Bonga Spill. Their report identifies the missing information that would inform them in their analysis, including photographic evidence of the spill and its impact, photographs of the polluted shoreline, estuaries and claimants' sites/habitats, aerial surveillance photographs, including spill fate trajectory monitoring and mapping.
160. In the absence of such evidence, the opinion of the EPE experts is that the MDA radar satellite imagery, especially the size, shape and location of the spill as depicted on 24 December 2011, provides a strong suggestion that a significant portion of the oil must have impacted the adjacent shorelines of Bayelsa and Delta states. However, their conclusion is subject to the following significant caveat:

“Our analysis after assessment of the information included in the documents/ files received with our instructions is technically limited to the strong indication that an unspecified amount of oil after the Bonga spill eventually impacted the Niger Delta shoreline. Determination of the area (which area/s in Niger Delta), the extent (the total range of contamination) and the degree (how much oil and of what type impacted the shoreline) could not be assessed.”

161. Drawing together the findings set out above on the volume, trajectory and fate of the oil spill, the conclusions that the court does reach on this issue can be summarised as follows:
- i) Approximately 40,000-42,500 barrels of oil escaped from the riser during the Bonga Spill.
 - ii) Approximately 30,000 barrels of oil from the Bonga Spill travelled through the water plume to reach the surface of the ocean by 21 December 2011.
 - iii) Bonga oil was not susceptible to emulsification given its low asphaltene content and did not emulsify to any material extent so as to increase its viscosity. As a result, the application of chemical dispersants was effective in dispersing substantial parts, but not all, of the oil on the surface.
 - iv) The experts agree that any Bonga oil would have reached the shoreline between 25 and 28 December 2011.
 - v) The volume of Bonga oil that reached the shoreline between 25 and 28 December 2011 was low, substantially smaller than the initial EPE prediction of 15,000 barrels, taking into account evaporation, dispersion, dissolving and biodegradation of the oil.
 - vi) The small amount of residual oil that impacted the shoreline, whether Bonga oil or mystery spill, was heavily weathered.
 - vii) There is photographic evidence of oil contamination in early 2012 along the shoreline in the Bayelsa and Delta States.
 - viii) The Fugro samples/results are not credible or reliable evidence as to the source of the oil that impacted the shore or any specific locations affected by oil contamination along the coastline.
 - ix) There is no credible or reliable evidence that any oil impacted the areas at or around the mouth of the Benin River.

Issue 2(ii): Stranding of the oil

162. The claimants' case is that oil from the Bonga Spill remained stranded on the shoreline, the adjacent sea bed of the Atlantic Ocean, the beds of the connected waterways and/or in mangrove swamps for months and/or years following the first arrival of the Bonga oil. This issue is considered against the potential mechanisms of

sinking and sedimentation, overwashing, tar ball formation and stranding in mangrove swamps.

Sinking and sedimentation

163. Dr Mamaloukas' opinion is that by the time the oil reached the coast, it was weathered and contained a higher proportion of solid material, a significant amount of which could have sunk and been deposited as solid material. This was likely to occur where the suspended sediment concentration is high, such as in the Niger Delta river estuaries, the extended shallow water zones with a sediment seabed of the Nigeria coastline, or the surf zone where oil and sand are subject to intense mixing. Thereafter, it could remain undisturbed for long periods of time as lumps of oil.
164. Professor Kalogerakis considers that oil buried underneath sediments could be in anaerobic conditions, precluding further weathering, until affected by extreme weather events.
165. Dr Boxall's opinion is that some oil could have been deposited in this way but there would have been only a small amount of oil and it would also be readily re-suspended before being buried by tidal flow. The oil would continue to degrade over time through microbial action; high levels of hydrocarbon utilising bacteria and fungi in the region would continue to break down dispersed oil in the marine estuary environment.
166. Dr French-McCay and Dr Fingas consider that the density of Bonga oil is too low to sink through seawater alone but could have sunk by mixing with sediment, sand and organic material in the nearshore area. Bonga oil did not have sufficient viscosity to form persistent masses that would be resistant to breaking up, such as sunken oil mats; any sedimented oil would have been in the form of small particles of highly weathered oil residuals that would be frequently disturbed by water motion and well oxygenated, leading to further weathering.
167. I consider that, although the expert evidence shows that it is possible for oil deposits to mix with sedimentation and sink to the seabed and riverbeds, it is very likely that such deposits would be small and readily re-suspended. I accept Dr French-McCay's expert opinion that Bonga oil did not have sufficient viscosity to form persistent masses of oil that would be resistant to breaking up, such as sunken oil mats. My view is fortified by the fact that there is no evidence that any solid oil masses were recovered from the nearshore sea bed, the estuaries or the river beds following the Bonga Spill.

Overwashing

168. Dr Mamaloukas and Professor Kalogerakis consider that another process that might have occurred is overwashing, the temporary submergence of oil below the water surface. Overwashing is caused by the action of waves and near-surface turbulence, provided that the density of the oil is close to that of water and the oil is sufficiently viscous so that the slick breaks up into discrete masses such as tar balls. Their view is that overwashing could have occurred when the oil entered the estuaries and moved from salt water to brackish/fresh water and that viscosity would have been sufficiently high after the first 48 hours of weathering when the density of the remaining oil had

increased. Overwashing could have trapped unnoticed quantities of oil in the inland part of the estuaries.

169. Dr Fingas and Dr French-McCay are of the view that overwashing is not applicable to the Bonga Spill because the oil is a light-medium crude and even after weathering would not exceed the density of seawater. Further, overwashing is the temporary covering of very heavy oil by water at sea, it would not significantly delay evaporation and could not last for 2-3 years as postulated by EPE.
170. The experts agree that, although it is possible for oil to sink below the surface of the water by overwashing, thereby reducing weathering by evaporation, such process is temporary. As discussed above, there is no evidence that oil reached the inland part of the estuaries. Significantly, it is common ground that Bonga oil is a light-medium crude and therefore its density is too low for overwashing to be a material factor in this case.

Tar balls

171. The experts agree that tar balls are a form of oil that can persist for substantial periods of time. Dr Mamaloukas considers that tar ball formation can happen at a later stage of weathering and oxidation of the oil and that weathered crude Bonga oil coagulated into tar balls.
172. Dr French-McCay and Dr Fingas do not consider that tar ball formation would have been a significant feature in the Bonga Spill because the oil was released in small droplets, less than 1mm in diameter, and became sheens after surfacing, rather than adhesive, heavy viscous masses.
173. The experts agree that tar balls are a form of oil that can persist for substantial periods of time and there is some, limited evidence supporting the claimants' case that this occurred. Photographs of the clean-up operation at Orobiri, Bayelsa State, in June 2012 show what are very likely to be tar balls along that part of the shore line. But what is clear is that the tar balls at Orobiri were very visible and were cleaned up. There are no similar accounts or photographs of tar balls in other areas of Bayelsa or Delta States during this period.

Mangroves

174. Dr Mamaloukas and Professor Kalogerakis believe that oil that reached the coastline could have entered the mangroves along the shoreline and become trapped in the mangrove sediments in the following ways. First, oil carried to the mangrove areas by tides could be deposited on the sediments and roots of the mangroves but would become weathered and lose its toxicity within several months. Second, oil entering crab burrows could remain trapped for several years without any further weathering or loss of toxicity. Third, oil transferred by extreme weather events, such as high waves, could reach the mangrove forest and become covered by sand/sediment particles, creating near anoxic conditions under which any further weathering of the oil would stop, enabling the oil to retain its toxicity for prolonged periods of time. It is this last

potential scenario that enables mangroves to retain oil, acting as sinks and leading to the persistence of oil on or inside the sediments.

175. Professor Duke's opinion is that, based on the evidence available, while oil from the Bonga Spill may have entered shoreline mangroves, it is most unlikely that substantial quantities of such oil became stranded amongst mangroves along the Niger Delta shoreline, especially those bordering the Benin and Escravos Rivers. He explains that mangroves are uniquely adapted to grow in saline conditions between the highest tidal level and mean sea level. If sufficient amounts of oil penetrate the mangroves, they will die. That is less likely following a marine oil spill because usually it is weathered and less toxic before reaching the mangroves. In contrast, following a pipeline oil spill, there is little time or opportunity for oil reaching the mangroves to weather and degrade and therefore it is more likely to be highly toxic. Regardless, the majority of stranded oil would be deposited on exposed surfaces of sediments and vegetation where it would rapidly oxidise and degrade; there is virtually no penetration of any stranded oil into typical mangrove sediments.
176. As to the first proposition by Dr Mamaloukas and Professor Kalogerakis, Professor Duke agreed that it was possible that oil could be carried in on tidal waves to the mangroves. However, towards the river estuary mouths and along the Niger Delta shoreline, the sandy sediments are porous and oxygenated, so that stranded oil would penetrate and diffuse amongst the sand grains, and probably result in more rapid degradation of the oil.
177. In cross-examination Professor Duke agreed that oil from a marine spill would arrive amongst mangroves floating on seawater with the normal ebb and flow of tidal waters driven by wind and water currents. However, he considers that deposited oil from a marine spill is not often observed in any appreciable quantity to re-float and move to other areas, unless the mangroves have already been degraded and stripped of vegetation by repeated oil spills, a situation that does not exist in the material Delta and Bayelsa areas in this case, which are relatively undisturbed, more healthy mangrove areas.
178. Professor Kalogerakis agreed in cross-examination that oil deposited on exposed surfaces, including mangrove roots, would dry and harden within several days or weeks, by which time it would no longer be toxic or mobile. He also agreed that the soils in the Niger Delta have virtually no capacity to absorb any spilled oil.
179. As to the second proposition, Professor Duke's view is that the only potential repositories for oil amongst the otherwise healthy mangrove forests are crab burrows, which form a network of burrows underground amongst the anaerobic sediments of mangrove forests. Oil from a marine spill, such as the Bonga Spill, can and does flow into crab burrows, killing the crabs, after which the burrows close over, trapping oil below ground. Typical mangrove sediments consist of fine silty clays which are not porous and, therefore, oil trapped in crab burrows can be preserved, albeit at low levels of toxicity. However, in cross-examination, Professor Kalogerakis agreed with Professor Dukes' observation that the crab burrows are small (1-2 cm diameter) and therefore any volume of trapped oil would be minimal.
180. There is no evidence to support the third, and only relevant, scenario raised by Dr Mamaloukas and Professor Kalogerakis as the source of oil that might become

trapped in the mangroves, namely, an extreme weather event at or shortly after the Bonga Spill.

181. Professor Duke's experience, from field studies and experimental trials of comparable marine spills affecting mangroves, is that the amount of stranded oil would be demonstrated by the extent of damage to mangrove forests. However, as he explains in his report, there is no evidence of any dieback of mangrove trees bordering the Benin and Escravos River estuaries, within three to six months after the Bonga Spill or in the years following the spill.

182. Professor Kalogerakis agreed in cross-examination that there is no imagery or photographs of any impact of oil or damage to the mangroves in the Delta area as would be expected:

“Q. You agree with this, I think, that if oil had landed near the mangroves, you would expect to see some effect on the mangroves, yes?

A. Yes.”

183. On the contrary, the aerial surveillance photographs taken by SNEPCo in March 2012 show the length of the coastline in question unaffected by oil, save for two isolated potential oil leaks near a processing plant and an abandoned ship. Critically, the photographs show no oil impact or damage to the mangroves, which appear to be healthy.

184. I accept Professor Duke's opinion that small amounts of oil could become trapped in crab burrows and, thereby, somewhat preserved but the sandy sediments found along the Niger Delta shorelines are notably porous and aerobic and therefore any stranded oil would be more likely to degrade. There is no evidence that any material quantities of oil became stranded in this manner. If substantial amounts of oil reached the shore, as predicted by the EPE model, dieback of swathes (30-40 hectares) of mangroves would be visible. The satellite imagery and photographs of the shoreline and interior areas of mangroves along the Benin River and other estuaries show no evidence of mangrove damage or dieback in 2012 or subsequently.

Conclusion on stranding

185. The experts agree that, in theory, potential mechanisms of sinking and sedimentation, overwashing, tar ball formation and stranding in mangrove swamps could result in stranding of oil from a marine oil spill.

186. What is striking in this case is the absence of any evidence that might establish whether such mechanisms in fact occurred.

187. The claimants' experts go no further than showing that the above factors were possible mechanisms causing stranding of oil at the shorelines, estuaries and rivers. That is not sufficient to prove the claimants' case on this issue. There is simply no evidence before the court that these factors resulted in any stranding of substantial quantities of oil that could have remained dormant for two or three years following the Bonga Spill.

Issue 2(iii): Remobilisation of the oil and transportation inland

188. The claimants' case is that stranded oil from the Bonga Spill was subsequently remobilised by the heavy weather events that regularly affect the Niger Delta and transported inland by the action of floods, the wind, waves and tides so as to reach the locations of the claimants at Ogheye-Uton, Abe-Bateren, Isuku-Gbene and Tonbrapade-Gbene.
189. The experts agree that any remobilised oil would have been in a weathered state. Professor Kalogerakis explains that the oil would be subject to weathering processes of evaporation, dispersion, sedimentation and biodegradation but the evaporation rate is reduced when there is overwashing, formation of tar balls and sedimentation. Where the oil is trapped in sediments (in estuaries or mangrove sediments), it can be further weathered only if oxygen penetrates the sediments and reaches the oil. In most cases, it is under anoxic conditions and no further evaporation or weathering occurs. Once any trapped oil is mobilised, the weathering process starts again but at a slower rate as the volatile compounds have already evaporated, leaving oil that contains most of the PAHs at more than 90% initial levels. Professor Kalogerakis believes that it is possible for stranded/sunken oil, deposited in sediments or trapped in mangroves, to be protected from further weathering by anaerobic environments and to resurface after very strong winds or extreme weather events, such as occurred in 2012 and 2015.
190. Dr French-McCay's position is that there are no reasonable mechanisms for the transport of partially weathered oil to the allegedly affected communities upstream and inland after delays of two or three years. Any oil from the Bonga Spill that reached coastal areas would have continued degrading if stranded. By 2014 and 2015, it would be highly weathered in nature, in the form of residual oil mixed with sediments, or as little highly degraded particles, none of which could re-form into floating slicks or regain the appearance of fresh oil. The experts agree that, in theory, tar balls are capable of being transported over long distances. However, Dr French-McCay's view is that it is implausible that highly weathered, dense oil could travel upstream along the river beds or subsequently re-float as inland slicks. On the basis of her experience and expertise, her view that it is not possible that damage as a result of the Bonga Spill could first be suffered in any of the Communities for the first time in 2014 or 2015.
191. Professor Duke's opinion is that it is not plausible that oil trapped in any impacted mangrove forest could remobilise after a period of years, as suggested by Dr Mamaloukas and Professor Kalogerakis. There is no evidence of such remobilisation and it would have required an exceptional disturbance event, such as a tsunami. Professor Kalogerakis agreed in cross-examination that the only way that oil could be remobilised out of crab burrows in the mangroves would be through a catastrophic event. Remobilised oil would not migrate and relocate either upstream beyond the reach of tidal waters, or upland onto arable terrestrial lands above highwater mark. The predominant flow across the delta of the Niger River is downstream and any remobilised oil would be flushed downstream and carried out to sea.
192. In cross-examination, Dr Boxall agreed with the UNEP Environmental Assessment – 'petroleum hydrocarbons in water', that tidal influences mean that spilled oil can be carried upstream as well as downstream of a given spill location. However, he explained that the oil could not go beyond the tidal incursion; it could travel some

distance upstream but it would be diluted and only where there was salt water, up to the limit of marine pollution. He accepted that, in theory, oil could travel upstream with seawater and pollute inland areas but it would be exposed to degradation over time and, if re-suspended, it would be in fairly low concentrations.

193. The communities of Tonbrapade-Gbene and Isuku-Gbene, as shown on the Communities Map, are about 1600-1700 metres above sea level. Dr Boxall was certain that they were too far upstream and too high, above the salinity limit, for any seawater carrying oil to reach those communities. The positive pressure of freshwater and any heavy rainfall would flush out any pollutants and gravity would carry them towards the ocean.
194. I appreciate that all the experts are hampered by the paucity of contemporaneous evidence, such as photographs, reports and samples, that might cast light on the extent of any oil becoming stranded on the shoreline or any subsequent remobilisation and transportation. It is of note that Dr Mamaloukas and Professor Kalogerakis, quite properly, have been careful to clarify that their evidence is limited to what could or might have happened, rather than what on the balance of probabilities did happen. Dr Mamaloukas expresses the view that it is not possible to exclude remobilisation as a possibility.
195. Only two potential events were identified that might conceivably be linked to the theory of remobilisation.
196. The first was flooding in 2012. However, as Professor Kalogerakis acknowledged, flooding in 2012 could not have caused oil contamination of any of the Communities in 2014 or 2015.
197. The second was flooding in 2015. That event was too late to affect Ogheye-Uton and Abe-Bateren, said to have been impacted by oil in 2014. Professor Kalogerakis stated that he found press articles evidencing flooding in August 2015 but no others. In cross-examination, Professor Kalogerakis accepted that it was highly unlikely that such event could affect Isuku-Gbene and Tonbrapade-Gbene because it would be required to travel 40-50 kilometres upstream.
198. Therefore, there are no identified events that could support a theory that stranded oil from the Bonga Spill in 2011 remobilised in 2014 and 2015 and impacted the Communities.
199. In cross-examination, Professor Kalogerakis agreed that he has seen no data to support the theory that oil remobilised and migrated inland:

“Q. You didn't have data to look at from the communities which it was alleged had been impacted several years later in order to see whether that was in fact Bonga spill. You didn't have such data did you?

A. No, no, personally I didn't have.

Q. In fact we were told by Captain Bekas, who gave evidence a couple of days ago, that samples were not taken from any of the

communities which it is now said were impacted several years later. So it's not just that you didn't have them, nobody had them. Does that accord with what you know?

A. Yeah, I think that's a good representation of reality. That is the situation."

200. Given the absence of cogent evidence before the court, I am unable to accept that the theories of the claimants' experts on this issue were manifest in 2014 or 2015 as remobilised oil. There is no evidence of re-mobilisation of any oil, no relevant extreme weather event identified and no contemporaneous reports that might give credence to the possibilities identified.

Issue 2(iv): Dates when any oil reached the Communities

201. The claimants' case is that Bonga Oil first reached the Communities as follows: (a) Ogheye-Uton on around 1 June 2014; (b) Abe-Bateren on around 20 June 2014; (c) Isuku-Gbene on around 1 September 2015; and (d) Tonbrapade-Gbene on around 1-10 September 2015.
202. The matters for the court to consider are:
- i) whether the Communities exist and, if so, where they are located;
 - ii) what evidence there is of oil pollution damage in the Communities in 2014 and 2015;
 - iii) whether any such oil pollution damage could be caused by the Bonga Spill in 2011;
 - iv) on the balance of probabilities the date of any such damage.

Existence and location of the Communities

203. The first task of the court on this issue is to determine whether the relevant communities exist and, if so, where they are located.
204. Professor Olaleye carried out a desk study and field study to identify the location of the communities in question. As part of the desk study, he used certified maps of Delta State of Nigeria dated 2000, the national electoral commission polling unit database as at 2018, certified pages of the Gazetteer of place names in Nigeria dated 1973, Google Earth satellite imagery in 2021 to establish a search window for each community, and the evidence and maps produced by the claimants. The field study comprised visits by a team of qualified surveyors to any nearby settlements outside of the search window to check if it was a relevant community, checking for signs, road names, landmarks and topographical reference features that might assist, together with speaking to people in the area.
205. Professor Olaleye's conclusions are that:
- i) there is a community called 'Ogheye-Uton' in the location indicated on the Communities Map;

- ii) there is no community by the name of 'Abe-Bateren' in the location indicated on the Communities Map; a community called 'Abe-Bateren' existed in the area up until 2003 but communal clashes between the Ijaw and Itsekiri people forced the residents to relocate from the area and it no longer exists as a community in the area today;
 - iii) there is no community by the name of 'Tonbrapade-Gbene' in the location indicated on the Communities Map; and
 - iv) there is no community by the name of 'Isuku-Gbene' in the location indicated on the Communities Map.
206. In cross-examination, Professor Olaleye accepted that there were inherent difficulties in carrying out his investigation in the Niger Delta. The terrain is difficult to navigate and usually the people travel by boats in creeks or by paths. They tend not to use maps and estimate distances by the time taken to navigate the route. The majority of the communities are small, fishing and agricultural communities, some of which are too small or sparsely populated to be located with precision, or communities become displaced or relocated over time. The area can be very difficult to map, the Delta State Map was compiled in 2000 and so is out of date, and almost perennial cloud cover makes it difficult for satellite imagery to locate communities.
207. With those issues in mind, I turn to consider the available evidence as to the location of the communities in question and the date on which oil pollution damage is likely to have first occurred.

Ogheye-Uton

208. Mr Demeyin is a member of the Ogheye-Uton community in Warri North, Delta State. He describes Ogheye-Uton as a coastline community, close to the communities of Orere and Oboro, at the mouth of the Benin River. That location has been confirmed by Professor Olaleye and evidenced by photographs. It is a small community located along Uton creek off the Benin River, approximately 720 metres from the Benin River, to the west of Ogheye-Dimigun. It is a low-lying swampy terrain with light to medium mangrove forest and is used for farming and fishing.
209. Mr Demeyin is the chairman of the community development committee, a position he has held since 2014. He lives with his family in Sapele but goes to Ogheye-Uton to fish and farm. Although he was not born there, his father was from Ogheye-Uton and Mr Demeyin inherited land from him.
210. In evidence, he explained that he did not see any oil at the mouth of the Benin River in 2011 and had no knowledge of any such incident in December 2011 or early 2012. He first heard about the Bonga Spill on the radio in around 2012-2013. When shown news reports from 'The Nigerian Voice' dated 6 January 2012 and 'Vanguard' dated 12 March 2012, identifying Ogheye-Uton as one of the communities affected by the Bonga Spill, he stated that he does not have access to newspapers and was not aware of any complaints about oil impacting the community at that time.
211. Mr Demeyin's evidence is that oil from the Bonga Spill first reached Ogheye-Uton on 1 June 2014, as set out in his witness statement:

“I witnessed the spill myself, there was a huge slick of oil along the coastline. I knew it to be the Bonga Oil Spill because it was the only oil spill at that time...

The Bonga oil spill caused water pollution and environmental pollution. As a result, there was major damage sustained to fishing and farming practices as the damage to the soil was fatal. New tools also had to be purchased because of the damage. Farming and fishing has since resumed to business as usual.

There was damage to drinking wells which meant members of my Community had to purchase water from nearby urban areas.

There was damage to religious shrines.”

212. In cross-examination, Mr Demeyin stated that he recalls the precise date of damage on 1 June 2014 because on that date the community members were not able to farm or fish and they held a community meeting. He knew that the oil was from the Bonga Spill because there was no other oil spill in the region at that time.
213. When shown a copy of an article in the ‘Vanguard’ dated 4 March 2014, reporting an oil spill from the facility of Nigeria Petroleum Development Company (“NPDC”), affecting all communities along Benin River, including Orere and Ogheye Dimigbun, he replied that he was not aware of any such oil spill and there was no impact on Ogheye-Uton at that time.
214. There are no crude oil, soil or contaminated water samples that are said to have been taken from Ogheye-Uton at any time between 2011 and 2015, or indeed thereafter. The court has no photographic evidence of any oil pollution of the land or waterways at Ogheye-Uton. Dr Burton has produced satellite imagery from 31 December 2014 and 11 January 2015, after the alleged date of damage, indicating no visual evidence of extensive oil damage to Ogheye-Uton or the surrounding area.
215. Based on the output of the EPE model, the MDA radar satellite imagery and the aerial surveillance photographs, Captain Bekas’ opinion is that oil from the Bonga Spill would have reached the mouth of the Benin River by late December 2011. Dr Burton concurs with this assessment; his opinion is that any impact to the coastal community of Ogheye-Uton from the Bonga Spill would have occurred within days or weeks of oil reaching the shore.
216. Mr Demeyin’s evidence that he was unaware of any oil ingress at the mouth of the Benin River in 2011/2012 is inconsistent with the contemporaneous newspaper reports at the time, referring to widespread complaints throughout the region. The most likely explanation is that the Bonga Spill did not in fact reach Ogheye-Uton. Alternatively, Mr Demeyin was unaware of any oil pollution because he did not visit the area during this period; he has never lived there and he did not become a community leader until 2014.
217. I have rejected the theory that stranded and remobilised oil from the Bonga Spill could have impacted Ogheye-Uton in 2014 on the basis that it is unsubstantiated by

any supporting evidence. Mr Demeyin's belief that the oil he witnessed along the coast in 2014 must be from the Bonga Spill is not supported by any evidence. On the contrary, there is evidence of another oil spill in 2014, from the NPDC facility, that is much more likely to be the source of any oil contamination at that time.

218. The above matters, and in particular the consensus of the experts, lead to the conclusion that any damage from the Bonga Spill affecting Ogheye-Uton would have occurred in December 2011 or January 2012.

Abe-Bateren

219. Mr Jalla was born in Aja-Edede, a shoreline community, and moved to Warri when he was about 4 years old. His evidence is that he owns a number of agricultural businesses, including farms in Aja-Edede, Abe-Bateren (his grandmother's village) and Isuku-Gbene (his mother's village).

220. In his fifth witness statement dated 21 March 2020, Mr Jalla states:

“Abe-Bateren is located up north of Warri, very far from the shoreline bordering the Benin River. Parts of Abe-Bateren contain thick or dense mangrove which leads to the shoreline, but the bulk of the community is embedded uplands and away from the coast. I own about 50 acres of land in Abe-Bateren, which I used to use for the breeding of tuna fish. My land is about 50 kilometres from the coast.”

221. In his seventh witness statement dated 2 July 2021 Mr Jalla provides more details as to the location of Abe-Bateren:

“Abe-Bateren is a sub-set community of Batera, you pass through Abe-Bateren to reach the main town. I am aware that previously my solicitors have had difficulty mapping with any accuracy Abe-Bateren, however I can confirm that my community is located near Batera on the Delta Map, close to the communities of Olobe and Bobi and near the Uton-Udo creek.”

222. An official map of Warri North LGA shows Bateren, Olobe and Bobi. Bateren is marked about 1.6 kilometres from the bank of Olegue Creek off the Benin River. The Communities Map served with the DODP shows Abe-Bateren at the same point as Bateren on the official map.

223. In cross-examination, Mr Jalla had great difficulty in explaining where he thought Abe-Bateren might be located. He refused to agree that it was about 7-10 kilometres from the shoreline and said that it could not be accessed from the coast. This is explicable when viewed through the lens of a fisherman. Bateren can be seen on the official map; although not far from the coast, it is not directly on the Atlantic shoreline and access by boat would require travel along the Benin River and into the Olegue Creek. Mr Jalla explained that Abe-Bateren is located beside Bateren. He also stated that his fish ponds are ‘freshwater’ (by which he explained he means seawater) ponds with tuna, a seawater fish. He stated that when the tide comes in, the water

flows into the pond from the river; when the tide goes out, the water flows out. This evidence confirms that Abe-Bateren is located in the same geographical area as Bateren.

224. Professor Olaleye's desk and field studies disclosed no settlements in the search window for Abe-Bateren. There were some fishing traps in the area, but not any farming in the vicinity of the search window and its surrounding area. The surveyors sent to investigate spoke to local members of the Baterentie community, which lies near the mouth of the Olegue Creek, who explained that Abe-Bateren existed until 2003 but communal clashes between the Ijaw and Itsekiri tribes forced the residents to relocate elsewhere.

225. Mr Ekotogbo explained in his evidence:

“Abe-Bateren is a community - is a fishing camp... when there is high tide, you see the place almost entirely flooded. and once it is low tide, then you can get some patches of land. Otherwise, most of the structures that we find on ground around Abe-Bateren, they are thatched houses with plank floor. They put plank on the floor for people to stay. But for the land itself, the land of Abe-Bateren, it's almost like submerged in water. It's a small island, and water almost up to the level of the water ...”

226. He explained that there are few communities on the immediate shorelines and they are sparsely inhabited. Most, if not all, of those immediate shoreline communities are in fact fishing settlements where fishermen or women settle when they fish seasonally.

227. What this indicates to the court is that Abe-Bateren is not a community where anyone permanently resides. It appears to be a fishing camp, used seasonally by members of the Bateren community and others who have fishing rights.

228. Mr Jalla's evidence is that damage was suffered by his fish farm in Abe-Bateren on 20 June 2014:

“Due to the viscosity of the crude oil which penetrated the fresh water and the creeks, the fish in my fish farm suffocated, and I lost the entire stock which comprised about 5,000 mature fishes, 7,000 at the intermediate stage and about 9,000 fingerlings, despite the best efforts of my cousin to salvage the situation before I arrived there the next day.”

229. He asserts that the damage in 2014 was caused by the 2011 Bonga Spill:

“The Bonga oil Spill first impacted by land on 20 June 2014. I remember the date that oil first reached my farm in Abe-Bateren vividly, as I had a meeting with NOSDRA to discuss the Bonga Oil Spill and what the agency was looking to do to bring relief to the people affected. Whilst in the meeting with NOSDRA's staff, I received a call from my cousin who told me over the telephone that the Bonga Oil Spill had also reached Abe-Bateren and that the fresh water appeared to be completely

contaminated, along with my land and the ponds situated on it. The next day, I left Abuja and flew to Warri and visited Abe-Bateren to witness the destruction first-hand.”

230. Mr Ekotogbo stated in his 2014 report to NOSDRA that he visited the Abe-Bateren community, which he referred to as one of the coastal communities and satellite villages affected by oil pollution.
231. There are no crude oil, soil or contaminated water samples that are said to have been taken from Abe-Bateren at any time between 2011 and 2014, or thereafter. Mr Jalla’s evidence is that he visited Abe Bateren in June 2014 after the oil damage but did not collect any samples. Although Mr Ekotogbo states that he took random samples of soil and water from some of the 350 communities he visited as part of his investigation in 2014, none of those samples, with or without results, has been made available to the court.
232. The most likely explanation for any oil pollution that affected Abe Bateren in June 2014 would be the pipeline oil spill from the facility of NPDC, reported in the ‘Vanguard’ on 4 March 2014, and said to affect all communities along the Benin River, including Bateren.
233. The court has no reliable or credible photographic evidence of any oil pollution of the fish ponds at Abe-Bateren for the reasons set out below.
234. On 21 March 2020 Mr Jalla produced his fifth witness statement, to which he attached photographs, described as follows:
 - i) Exhibit HJ16 – two photographs, said to show Mr Jalla’s land in Aja-Edede polluted with oil, taken on 18 December 2012;
 - ii) Exhibit HJ17(a) – a photograph, said to show Mr Jalla’s fishpond at Abe-Bateren polluted with crude oil, taken on 22 June 2014;
 - iii) Exhibit HJ17(b) – a photograph, said to show Mr Jalla’s fishpond at Abe-Bateren, taken on 16 March 2020.
235. Reference was also made to exhibit HJ18, a photograph, said to show Mr Jalla’s fishpond at Isuku-Gbene, taken on 3 February 2020, but this exhibit was omitted from the statement.
236. On 20 April 2020 Mr Jalla produced his sixth witness statement, in which he re-stated his evidence as to damage suffered to his lands, including the exhibited photographs referred to above.
237. On 21 March 2020 Mr Chujor produced his first witness statement, to which he attached photographs, described as follows:
 - i) Exhibit AC1(a) – a photograph, said to show Mr Chujor’s land in Aja-Edede polluted with oil, taken on 17 December 2012;
 - ii) Exhibit AC1(b) – a photograph, said to show Mr Chujor’s land in Aja-Edede, taken on 16 March 2020;

- iii) Exhibit AC2(i) – a photograph, said to show Mr Chujor’s fish farm in Tonbrapade-Gbene destroyed by oil, taken on 4 September 2015.
238. On 20 April 2020 Mr Chujor produced his second witness statement, in which he re-stated his evidence as to damage suffered to his lands, including the exhibited photographs referred to above.
239. By a note to the parties dated 27 May 2020, Stuart-Smith J (as he then was) identified concerns as to the evidence filed by Mr Jalla and Mr Chujor:

“8. This evidence presents problems that require explanation:

a. Turn first to E/104 (said to be taken on 22 June 2014). It is possible to identify from left to right: Man 1 (white shirt, distinctive wristband on left and watch on right wrists, blue cropped jeans), Man 2 (striped blue and white shirt and blueish shorts) and Man 3 (grey/green/black shirt and black shorts with white piping). These three men are identified by Mr Jalla as his staff workers.

b. Turn next to E/105 (said to be taken 16 March 2020 and to show Mr Jalla’s staff workers). It is possible to identify Man 1 and Man 3 from the previous photographs by virtue of their clothes and general appearance. It is also possible to identify Man 4 (blue/white long-sleeve shirt, blue jeans, yellow boots) and Man 5 (black top and cropped trousers, watch on right wrist). Man 2 is not there.

c. Taken in isolation, the suggestion must be that Man 1 and 3 were wearing the same clothes and wrist bands on 22 June 2014 and 16 March 2020.

9. Turn next to E/92 (which is said to be taken on Mr Chujor’s land on 4 September 2015 and to show Mr Chujor’s workers”. The man second from left is not shown in the previous photographs, but it is possible to Identify (from left to right) Man 2, Man 4, Man 5, Man 3 and Man 1. All are wearing the same clothes and wrist bands as in the two Jalla photos.

10. Now compare E/92 with E/105. They appear to be taken at the same spot.

11. This review of the photographs appears to cast doubt upon the evidence of Mr Jalla (5th and 6th witness statements) and Mr Chujor (1st and 2nd witness statements) about where and when these three photographs were taken and what they show.

12. Either at the hearing or very soon thereafter, a full explanation will be required.”

240. Cutting to the chase, it is clear from the photographs that (i) exhibit HJ17(a): 'Mr Jalla's fishpond at Abe-Bateren dated 22 June 2014', (ii) exhibit HJ17(b): 'Mr Jalla's fishpond at Abe-Bateren, dated 16 March 2020', (iii) exhibit AC1(a): 'Mr Chujor's land in Aja-Edede dated 17 December 2012' and (iv) exhibit AC2(i): 'Mr Chujor's fish farm in Tonbrapade-Gbene dated 4 September 2015' are photographs of the same people, at the same place, on the same date.
241. The discrepancies were acknowledged by Mr Jalla and Mr Chujor, who each produced a sworn affidavit dated 11 June 2020 to this effect. Their explanation was that Mr Okerieke, secretary to the Bonga Oil Spill Steering Committee and OSPIVV, mistakenly attached the wrong photographs to the witness statements.
242. Mr Jalla's explanation is that Mr Okerieke was responsible for the mistake. Mr Jalla did not have the photographs with him when he signed his fifth statement. By telephone, he described the photographs to Mr Okerieke, who stated that he knew which photographs were meant. Mr Jalla failed to check the photographs that were attached to the fifth witness statement before it was served and likewise, failed to check the photographs for the purpose of signing his sixth witness statement.
243. Mr Chujor gave the following explanation in his affidavit:
- "Whilst preparing my first witness statement I liaised very closely with the Secretary to whom I gave specific instruction over the telephone concerning the photographs exhibit to my first witness statement...
- I honestly was under the impression that the Secretary was familiar with my photographs.
- I held telephone discussions with the Secretary about the photographs relevant to my first witness statement. I gave the Secretary clear instructions where to insert the photographs in my first witness statements. The Secretary confirmed to me that he understood my instructions...
- I signed my first witness statement without also seeing the exhibits and sent my first witness statement by email to the Secretary for him to attach the relevant photographs to be exhibited to the witness statement...
- The Secretary's manuscript handwriting is on the exhibits AC1(a), AC1(b) and AC2(i)."
244. Mr Okerieke's explanation was set out in his first affidavit dated 11 June 2020 (subject to corrections as set out in his second affidavit dated 15 June 2020):

"On or around 21 March 2020 Jalla 5 and Chujor 1 were sent to me for the purpose [of] attaching relevant and supporting [materials] and letters behind each of the exhibits to which they both referred in their witness statements..."

Both Mr Jalla and Mr Chujor spent considerable time with me on the phone explaining to me what [materials] I needed to place behind each exhibit. There are numerous pictures that we hold in the office taken at different times by different people from all around the affected areas in the Niger Delta. It was not really a problem finding the pictures belonging to Mr Jalla and Mr Chujor as I knew exactly where to look but it was the sheer number of their pictures that I believe may have given rise to the error that I eventually committed.

In labelling the picture attachments for the fifth witness statement of Mr Harrison Jalla and the first witness statement of Mr Abel Chujor, I mistakenly used the same pictures for Mr Jalla and Mr Chujor.”

245. In cross-examination, Mr Okerieke had great difficulty in explaining exactly what happened. In particular, he was unable to give any coherent evidence as to when the photographs were sent to him, whether they were sent with the statements or on some earlier date, whether Mr Chujor spoke to him, how Mr Jalla described the photographs that needed to be attached to the statements or how he knew which photographs to select.
246. In the absence of a satisfactory explanation from the relevant witnesses, the court is driven to the conclusion that this photographic evidence is unreliable and not credible.
247. Of greater evidential value is satellite imagery produced by Dr Burton, dated 7 December 2006 and 31 December 2014, which indicates widespread oil impact resulting in the death of mangroves. Of significance, there is no evidence of any change in the extent of such oil contamination to Abe-Bateren or the surrounding area between those dates.
248. As set out above, the consensus between the experts is that oil from the Bonga Spill would have reached the mouth of the Benin River by 28 December 2011. Although Dr Mamaloukas states that it is possible for Abe-Bateren to have been affected by remobilised Bonga oil at a later time, there is no credible evidence to substantiate that suggestion. Dr Burton’s opinion is that any impact to the near-coastal community of Abe-Bateren from the Bonga Spill would have occurred within days or weeks of oil reaching the shore.
249. The above matters all lead to the following conclusions:
 - i) Abe-Bateren is a fishing camp located at Bateren in the location identified on the Communities Map.
 - ii) There is no evidence of any fresh oil damage affecting Abe-Bateren between 2006 and December 2014.
 - iii) The most likely explanation for any oil pollution that affected Abe Bateren in June 2014 would be the pipeline oil spill from the facility of NPDC.

- iv) Any damage from the Bonga Spill affecting Abe-Bateren would have occurred in December 2011 or January 2012.

Tonbrapade-Gbene

250. Mr Chujor's evidence is that he resides in Ogidigben village in Aja-Edede, where he owns farmland. He also owns a fish farm in Tonbrapade-Gbene, a community approximately 220 miles from Aja Edede, about seven hours' boat ride or approximately two and a half hours' drive, in Warri North bordering Benin, near the border with Edo State.
251. There is much confusion as to the existence and/or location of Tonbrapade-Gbene. In June 2020 the claimants served maps identifying the location of the communities said to have been impacted by oil from the Bonga Spill. One of these maps identified Tonbrapade-Gbene as a shoreline community in Burutu LGA, Delta State, near the border with Bayelsa State and about 8 kilometres from the coast. However, when challenged by the defendants, the claimants stated that this was included by mistake; there was another Tonbrapade-Gbene community in Delta State, which was located near Ologbo, very far from the coast, near the border with Edo State.
252. The location of Tonbrapade-Gbene marked on the Communities Map served with the DODP is in Delta State, near the Ossiomo River, a tributary of the Benin River in the forest of Warri North LGA. This appears to be supported by a deed of assignment dated 21 November 2005, whereby Chief Akokari Akpodiaga of Tonbrapade-Gbene assigned to Mr Chujor 25 acres of land located near the Edo State border in Tonbrapade-Gbene, Warri North LGA, Delta State. That description is contradicted, however, by a letter dated 1 September 2015, attached to Mr Chujor's second witness statement. The letter, from members of the Tonbrapade-Gbene community to the State Governor, complaining about oil pollution, describes the community of Tonbrapade-Gbene as Warri South-West of Delta State.
253. Mr Chujor was unable to provide any further details of the community that might assist the court:
- “Q. How many people live in Tonbrapade-Gbene would you say, approximately?
- A. I wouldn't know, because I'm only concerned with my fish farm that was there. I didn't know about the community very well.”
254. Professor Olaleye's desk search using Google Earth imagery appeared to show a small settlement within the approximate search window defined from the Communities Map, which appeared to be close to the Koko and Arunologbo communities, as identified using the Delta State Maps. However, the field visit confirmed this settlement as a different community, Inkara, and they were unable to find a community of Tonbrapade-Gbene. Photographs taken of the area show that it is surrounded by thick forest and the closest river is the Ossiomo River, which is non-tidal at this location.

255. When asked about this, Mr Chujor stated that he did not know the communities of Koko or Arunologbo, stating:

“I don’t live in the area. I only have a fish farm in the area. And that is what I was concerned with.”

256. Mr Chujor’s evidence is that his fish farm in Tonbrapade-Gbene was destroyed when it was hit by oil from the Bonga Spill on 1 September 2015. It became clear during cross-examination that Mr Chujor assumed that any oil spill must be the responsibility of Shell; he did not distinguish between Shell and NPDC, which would explain his assumption that any oil contamination in 2015 must be from the Bonga Spill.

257. Mr Emmanuel is a community leader of Tonbrapade-Gbene in LGA of Warri North in Delta State. His witness statement dated 1 July 2021 states that his community is located in Warri North in Delta State, close to the communities of Ologbo and Koko, near the border of Edo State. In cross-examination he stated that the Ossiomo River is close to Ologbo but not to his community, although he travels to Ossiomo by canoe. He confirmed that the location of Tonbrapade-Gbene is as marked on the Communities Map but when he was asked about this in cross-examination, he was frank in his reply:

“I am aware that my community is in Delta State, it's in Warri North Local Government Area. But I wouldn't know, I may not be able to say whether this map is a true representation of where my community is.”

258. Mr Emmanuel’s evidence is that:

“Oil from the Bonga oil spill first reached my community on 10 September 2015. I was an eyewitness to the event. I saw crude oil all over the water around my community. It was prevalent when it occurred. I remember this date clearly because an elder in my community who had been suffering from a protracted illness, passed away on the same day. This date could not be forgotten.”

259. He explained that he knew it was from the Bonga Spill because there were reports on the radio that it was the Bonga Spill and his understanding is that there were not any other spills in that area.

260. It is striking that there are no contemporaneous records or news reports in relation to the alleged oil spill in 2015. For the reasons set out above, the court does not consider that the photograph referred to by Mr Chujor as showing oil damage at Tonbrapade-Gbene on 4 September 2015 is reliable or credible. There are no oil, soil or water samples from the area and no investigative report has been produced. Witness statements containing bare assertions of oil pollution years after the event, without any supporting evidence are not adequate to establish the date of damage, or indeed, any damage.

261. Dr Boxall explains that any oil from a marine spill could only be distributed to regions with salt water. The oil from a marine spill is contained within the sea water.

Whilst it will be diluted by fresh river water along with the sea water, it cannot move independently of the sea water. If the salinity drops, the oil level will also drop. Therefore, transfer of oil from a marine spill to fresh water systems, beyond the salinity limit, would not be possible. In addition, rainwater and storms would tend to take any material down river and out to sea, not up river. Two of the communities, Isuku-Gbene and Tonbrapade-Gbene, are described as 18 metres above sea level. On that basis, it is not possible for any oil to be carried upstream to those locations.

262. Dr Burton's opinion is that for oil to have impacted Tonbrapade-Gbene, buried oil from the Bonga Spill would have to have been re-mobilised and migrated approximately 39 kilometres up the Benin River and then entered the Ossiomo River and migrated 35 kilometres along the river to impact the shoreline adjacent to Tonbrapade-Gbene. There is no evidence from available research that the Ossiomo River in proximity to the community is tidal, which is the only way that oil within the Benin River could subsequently enter the Ossiomo River and flow upstream to impact the community of Tonbrapade-Gbene. Given the available evidence on the flow of the Ossiomo River and the distances from the confluence of the Ossiomo River and the Benin River, he does not consider it plausible for oil from the Bonga oil spill to have impacted the community of Tonbrapade-Gbene.
263. Further, Dr Burton has produced satellite imagery of Tonbrapade-Gbene, as marked on the Communities Map, from 22 December 2015, obtained after the date of the alleged oil pollution, which shows no evidence of extensive oil damage to the area.
264. In cross-examination, Professor Kalogerakis stated that it was unlikely, a very low probability, that remobilised oil could travel upstream to Tonbrapade-Gbene. He also agreed that it was not possible for any remobilised oil to materialise as floating oil and slicks, as described by Mr Emmanuel; it would not appear as liquid spill.
265. The claimants' factual evidence is very unsatisfactory, both in relation to the location of the community of Tonbrapade-Gbene and in relation to the timing and extent of any oil pollution damage. There is no supporting evidence, such as contemporaneous reports, or oil, water and soil samples. The experts agree that the facts alleged could not have occurred. On that basis, the court can conclude, to a high degree of confidence, that oil from the Bonga Spill in 2011 could not have been transported, and did not cause any oil pollution damage, to the community or area identified as Tonbrapade-Gbene in September 2015, or at all.

Isuku-Gbene

266. Mr Jalla's evidence is that, although he lives in Aja-Edede, he has a fishing farm business in Isuku-Gbene, his wife's village, with fish ponds used to breed Mackerel spread over about 20 acres of land. In his witness statements, he states that Isuku-Gbene is located in Warri North, Delta State, very close to border with Edo State and the nearest town is Ologbo.
267. There is no documentary evidence to support the alleged location of Isuku-Gbene. A deed of assignment dated 5 March 2006 provides that Chief Alamiyeesigha Ibibo of Isuku-Gbene Community assigned to Mr Jalla 20 acres of land in Isuku-Gbene but it does not describe where the land is situated or attach a map. A letter dated 30 September 2015 from the Isuku-Gbene Community addressed to the President of the

State in Abuja, reporting on pollution damage caused by the Bonga Spill, describes the community as in Ekeremor LGA in Warri South-West of Delta State.

268. Mr Ikinbor is the community leader and chairman of the community development committee of Isuku-Gbene, which he describes as located close to the Benin River, in Ovia North East LGA which borders Edo and Delta states. In re-examination, he stated that he was born in Isuku-Gbene; the community comprises about 1,000 members; and it is close to Ofunama and Ogbinbiri.
269. Mr Ekotogbo's evidence is that he visited Isuku-Gbene on 4 September 2015 and he confirmed that it was close to Ofunama, and Ogbinbiri. That would place it in Warri North but much further west and north of Koko, to the north of the Benin River.
270. Unfortunately, despite the best efforts of the claimants' legal team, they were unable to clarify the precise location intended by the witnesses, so as to establish it with any degree of confidence.
271. The location of Isuku-Gbene marked on the Communities Map served with the DODP is between Ugbenu in Delta State and Ologbo in Edo State and on the right-side of Benin-Sapele-Warri Road, not far from the road junction leading to Koko.
272. Professor Olaleye's desk study, using Google Earth imagery, indicates no traces of any human settlement in the location shown on the Communities Map; the entire area is surrounded by forest and the closest river is the Ossiomo River, which is non-tidal at the location. The field study surveyors were unable to find this community, or to find anyone living in the area who knew of a town called Isuku-Gbene.
273. Mr Jalla's evidence is that on 1 September 2015 there was an ingress of crude oil into his fish ponds at Isuku-Gbene, decimating his fish stocks.
274. Mr Ikinbor states in his witness statement that:

"Oil from the Bonga spill first reached my community on 1 September 2015. We woke up to see oil floating on top of the river. I believed that it was Bonga oil because it was the only spill at the time."
275. Professor Kalogerakis stated in evidence that it was not possible for remobilised oil to have materialised as floating oil or oil slicks.
276. For the reasons set out above, the court has no reliable or credible photographic evidence of any oil pollution of the fish ponds at Isuku-Gbene.
277. A letter dated 30 September 2015 from the Isuku-Gbene Community to the President of the Senate in Abuja said that a committee had been sent out to ascertain the extent of devastation caused by the oil spill but no report (if prepared) has been produced in evidence. Mr Ekotogbo states in his evidence that he visited Isuku-Gbene on 4 September 2015 to assess the damage, although he could not say when such damage occurred. No report of that visit, no photographs from the visit and no samples or other contemporaneous evidence have been produced.

278. The opinions of Dr Boxall and Dr Burton in respect of Tonbrapade-Gbene apply equally to Isuku-Gbene, even allowing for the uncertainty as to its location. Professor Kalogerakis agreed that it was unlikely, a very low probability that remobilised oil could travel upstream to Isuku-Gbene.
279. Dr Burton has produced satellite imagery of Isuku-Gbene, based on the location set out on the Communities Map in the DODP, from 7 June 2010 and 6 December 2015. The satellite imagery from December 2015, obtained after the alleged date of damage, shows no indication of extensive oil damage to Isuku-Gbene.
280. Drawing that evidence together, the only conclusion that the court can reach is that oil from the Bonga Spill in 2011 could not have been transported, and did not cause any oil pollution damage, to the community or area identified as Isuku-Gbene in September 2015, or indeed at all.
281. In summary:
- i) There is a community called Ogheye-Uton in the location indicated on the Communities Map. Any damage from the Bonga Spill affecting Ogheye-Uton would have occurred in December 2011 or January 2012.
 - ii) There is no community by the name of Abe-Bateren in the location indicated on the Communities Map but there is a fishing camp. Any damage from the Bonga Spill affecting Abe-Bateren would have occurred in December 2011 or January 2012.
 - iii) The claimants have not demonstrated, on the balance of probabilities, that there is a community by the name of Tonbrapade-Gbene in the location indicated on the Communities Map. Oil from the Bonga Spill in 2011 could not have been transported, and did not cause any oil pollution damage, to the community or area identified as Tonbrapade-Gbene; the claimants have failed to establish that the Bonga, or other marine spill, in 2011 impacted that Community later than 2012, or in 2015, or at any time.
 - iv) The claimants have not demonstrated, on the balance of probabilities, that there is a community by the name of Isuku-Gbene in the location indicated on the Communities Map. Oil from the Bonga Spill in 2011 could not have been transported, and did not cause any oil pollution damage, to the community or area identified as Isuku-Gbene; the claimants have failed to establish that the Bonga, or other marine spill, in 2011 impacted that Community any later than 2012, or in 2015, or at any time.

Issue 2(v): Other sources of oil pollution

282. The claimants' case is that pollution in the Communities did not result from other oil spills or leaks in the Niger Delta region, caused by crude oil theft, sabotage, illegal refining or otherwise. There have been other minor and geographically localised spills but they are not a credible explanation for the wave of pollution that began to sweep the Niger Delta from 2014 onwards.
283. In their Joint Statement, the experts agreed as follows:

“It is agreed that for 40 or 50 years there has been chronic oil pollution of the Niger delta. It is agreed that the oil industry and illegal activities leading to oil spillage have caused widespread environmental damage to the region.”

284. Dr Mamaloukas’ opinion is that, although there are regular reports of oil spills from the Niger Delta’s network of terminals, pipelines, pumping stations and oil platforms, causing serious degradation of the environment, they are usually highly localised and the origin of the leak is usually ascertainable.
285. Dr Burton considers there is clear evidence of chronic oil contamination dating from the 1970s and continuing to date, as a result of repeated oil spill incidents from equipment failure, operation and maintenance errors and, increasingly in recent years, sabotage, oil theft and artisanal refining. Between 1978 to 2006, he identified twelve oil spill incidents in the Delta and Bayelsa States where the volume of oil released to the environment from each incident was greater than 10,000 barrels and the total volume of oil released to the environment represented by these incidents was over 1.5 million barrels.
286. He assessed the sources of oil pollution in the vicinity of the Communities and identified evidence of on-shore oil spills that are likely to have impacted the communities before the Bonga Spill and between the Bonga Spill and the alleged dates of damage. In the Delta, Bayelsa, Ondo and Edo States, between 2011 and 2015, a total of 80,933 barrels of crude oil, refined products and condensate were released to the environment, of which 80,365 barrels were reported as crude oil. In cross-examination, he agreed that, by volume and probably impact, the Bonga spill incident was rated as the most major oil spill to occur offshore in Nigeria since 1998. However, he noted many of the spills recorded in the NOSDRA database indicate an unknown quantity of oil, and, therefore, the total estimated spill quantity is likely to be far less than the figures recorded in the database.
287. Dr Burton’s opinion is that the area surrounding Ogheye-Uton appears to have been affected by oil contamination from sources other than the Bonga Spill. Satellite imagery from the 12 December 2011, prior to the Bonga Spill, shows visual evidence of crude oil entering a creek which flows into the River Benin on the northern bank of the river approximately 13 km along the coast from Ogheye-Uton.
288. Similarly, Dr Burton considers that the area surrounding Abe Bateren appears to have been affected by oil contamination from sources other than the Bonga Spill. Satellite imagery in 2006 shows areas of bare soil where mangroves have died, most likely from oil pollution. Satellite imagery from December 2014 does not indicate any oil damage to Abe Bateren or the surrounding area that could not be seen in 2006.
289. Satellite imagery from December 2015 indicates no evidence of extensive oil damage to the areas in which Tonbrapade-Gbene and Isuku-Gbene are said to be located.
290. The claimants have been unable to produce any samples, any fingerprinting or other analytical evidence to demonstrate the impact on any of the Communities from the Bonga Spill. Captain Bekas explained in evidence that he carried out a technical assay visit in Niger Delta between 17 to 30 of March 2021. He and his team visited affected communities in the States of Bayelsa and Delta State, between the Forcados and

Ramos Rivers, and a number of soil samples were collected from twelve locations identified as areas first impacted by the oil spill. However, this did not include any visit to Isuku-Gbene, Tonbrapade-Gbene, Abe Bateren or Ogheye-Uton and no samples were taken from those areas.

291. Therefore, against the background of chronic oil pollution in the Niger Delta, the satellite imagery indicates no impact from the Bonga Spill on the Communities and there is no physical evidence of such impact through oil, water or soil samples.
292. In those circumstances, the only conclusion that can be drawn is that the claimants have not established that the only credible explanation for any oil pollution experienced in each of the Communities was the Bonga Spill, rather than other oil spills or leaks in the Niger Delta region, caused by crude oil theft, sabotage, illegal refining or otherwise.

Conclusion on Issue 2

293. For the reasons set out above:

- i) The Bonga Spill was substantial, amounting to approximately 40,000-42,500 barrels. Any Bonga oil would have reached the coastline in Delta and Bayelsa States between 25 and 28 December 2011.
- ii) The volume of Bonga oil that would have reached the shoreline was low, substantially smaller than the initial EPE prediction of 15,000 barrels, taking into account evaporation, dispersion, dissolving and biodegradation of the oil, and heavily weathered.
- iii) There is evidence of oil contamination along the shoreline in early 2012 in Bayelsa and Delta States but there is no evidence that such oil impacted the areas at or around the mouth of the Benin River.
- iv) In theory, any oil that reached the coastline could become stranded on the shoreline, the sea bed or in river estuaries by the process of sinking, sedimentation and/or overwashing and/or trapped in mangrove swamps but there is no evidence that it did so in this case. On that basis, I find that the oil did not become stranded as alleged by the claimants.
- v) There is no plausible theory or evidence that any stranded oil was subsequently remobilised by weather events and transported inland to the Communities in 2014 or 2015.
- vi) Any oil from the Bonga Spill would have impacted Ogheye-Uton and/or Abe-Bateren in December 2011, or at the latest, January 2012.
- vii) Any Bonga oil could not have been transported inland so as to impact Tonbrapade-Gbene or Isuku-Gbene; the claimants have failed to establish that the Bonga Spill, or other marine spill in 2011, impacted those communities any later than 2012, or at any time.

- viii) There is an alternative credible explanation for any oil pollution experienced in each of the Communities on the dates alleged, namely, other oil spills or leaks in the Niger Delta region, caused by crude oil theft, sabotage, illegal refining or otherwise.

Issue 1 - Limitation

294. It is common ground that Nigerian Law applies to the claims made in these proceedings, including the limitation period applicable to the claims. The issue between the parties is whether the applicable limitation period is six years, as submitted by the claimants, or five years, as submitted by the defendants.
295. Having regard to the findings of the court on the date of damage, it is clear that none of the claims in these proceedings was made against STASCO within any applicable limitation period. Therefore, strictly it is unnecessary for the court to go on and determine the issue of limitation. However, as the matter was fully argued before me and there remains an outstanding appeal to the Supreme Court as to the date on which any cause of action accrued, for completeness I deal with the issue briefly.

Background

296. Where, as in this case, the parties rely on foreign law, that law must be proved, as a fact to the satisfaction of the court on the balance of probabilities, save where it is agreed. In determining the material principles of Nigerian Law in this case, the court has the benefit of expert reports from highly qualified and very able Nigerian lawyers, and access to the source material on which they have based their opinions.
297. The court's approach to the case law adduced in evidence by the experts is neatly summarised by *Dicey, Morris & Collins, The Conflict of Laws* (16th ed. 2022) at 3-019:

“Considerable weight is usually given to the decisions of foreign courts as evidence of foreign law, though such decisions can only, it seems be referred to if in the evidence of an expert witness and, further must be interpreted in the light of the meaning attributed to the decisions by the expert rather than according to the court's independent research involving material not referred to by the expert. But the court is not bound to apply a foreign decision if it is satisfied, as a result of all the evidence, that the decision does not accurately represent the foreign law. Where foreign decisions conflict, the court may be asked to decide between them, even though in the foreign country the question still remains to be authoritatively settled.”

298. As might be expected, there is a large measure of agreement between the legal experts on limitation, Professor Ojukwu SAN and Mr Fagbohunlu SAN.
299. In order of hierarchy, the sources of Nigerian Law are: (i) the Constitution; (ii) Nigerian legislation; (iii) received English Laws (comprising common law, equitable doctrines and statutes of general application in force in England on 1 January 1900);

- (iv) customary laws (consisting of Islamic laws and customary laws of indigenous communities); and (v) judicial precedent.
300. Nigeria operates a federal system of government, with 36 states and the federal capital territory (“FCT”), Abuja. The National Assembly, comprising the House of Representatives and the Senate, makes laws for the Federation regarding matters in the exclusive and concurrent legislative list of the Constitution; the state legislators in each state make laws for that state regarding matters in the concurrent and residual legislative list of the Constitution.
301. Judicial precedent applies based on the hierarchy of the courts in the following descending order: (i) the Supreme Court is the highest court of authority and binds all lower courts; (ii) the Court of Appeal binds all lower courts; and (iii) the high courts, namely, 39 divisions of the Federal High Court, State High Courts, FCT High Court Abuja and National Industrial Court of Nigeria, are bound by the Supreme Court and Court of Appeal decisions but not by other high court decisions.
302. Section 32 of the Interpretation Act 1964 provides:
- “Subject to the provisions of this section and except in so far as other provision is made by any Federal Law, the Common law of England and doctrines of equity, together with the statutes of general application that were in force in England on 1st day of January 1900, shall, in so far as they relate to any matter within the legislative competence of the federal legislature, be in force in Nigeria.”
303. One of the statutes of general application in force in England on 1 January 1900 is the Limitation of Actions Act 1623 (“the 1623 Act”), which provides for a limitation period of six years for claims that would amount to tortious claims.
304. The National Assembly for the Federation has not enacted any general limitation statute and no such provision is made in the Constitution.
305. The State legislature for Delta State has enacted a general limitation statute. Section 18 of the Limitation Law of Delta State 2006 (“the Delta State Limitation Law”) provides for a limitation period of five years for claims in tort:
- “No action founded on contract, tort or any other action not specifically provided for in Parts II and III of this Law shall be brought after the expiration of five years from the date on which the cause of action accrued.”

Parties’ positions

306. The claimants’ position is that the limitation period applicable to their claims is the six-year period provided for by the 1623 Act. In the absence of specific federal legislation on this issue, this residual provision is the limitation law generally applicable in Nigeria, including at a federal level, by virtue of section 32(1) of the Interpretation Act 1964. The Delta State Limitation Law is inapplicable in the Federal High Court; only federal legislation can apply, irrespective of where the Federal High

Court sits. The claimants could choose to bring their claims in any of the 39 divisions of the Federal High Court and would not be confined to the Federal High Court in Delta State.

307. Further, the claimants are entitled by Article 7 of Regulation (EC) No.864/2007 of the European Parliament and of the Council of 11 July 2007 on the law applicable to non-contractual obligations (“Rome II”) to choose the law applicable in the Nigerian Exclusive Economic Zone (“EEZ”) as the *lex causae* governing their claims for environmental damage, as the country where the event giving rise to the damage occurred. The EEZ falls within the control of the Federal Government of Nigeria; as such, it would be subject to the Nigerian Federal law of torts and the residual 1623 Act limitation period.
308. The defendants’ position is that the limitation period applicable to the claimants’ claims is the five-year period provided for by the Delta State Limitation Law. The relevant Federal High Court for the claims would be the Federal High Court in Delta State, as the place where the alleged damage occurred. The Nigerian authorities on limitation confirm that if a local limitation law exists in the relevant state, that law applies to the claim; and the limitation statute of each state is territorial in scope. On that basis, the Delta State Limitation Law applies to any action brought in the territorial area of Delta State, including the Federal High Court in Delta State.
309. The defendants submit that the further argument based on choice of law does not assist the claimants. The Nigerian EEZ is not a “country” for the purpose of Article 25(1) of Rome II, it has no applicable limitation law and it would not override the jurisdiction of the Federal High Court to determine the claims in these proceedings.

Jurisdiction

310. The legal experts agree that the Nigerian Federal High Court would have exclusive jurisdiction to hear the claims in these proceedings, as claims for damages in tort resulting from an oil spill, in accordance with section 251(1)(n) of the Nigerian Constitution and section 7(1)(n) of the Federal High Court Act.
311. Professor Ojukwu’s opinion is that any division of the Federal High Court in Nigeria has jurisdiction and could competently entertain the claims the subject of these proceedings because it has a unitary or nationwide jurisdiction. It may be divided into geographical divisions spread throughout the county for convenience but in each case it is the same court exercising the same jurisdiction. He relies on section 19(1) of the Federal High Court Act 1973:

“The Court shall have and exercise jurisdiction throughout the Federation, and for that purpose the whole area of the Federation shall be divided by the Chief Judge into such number of Judicial Divisions or part thereof by such name as he may think fit.”

312. Mr Fagbohunlu’s opinion is that as a matter of Nigerian procedural law, the Federal High Court in Delta State would be the proper forum for these claims in tort. He relies on Order 2, Rule 1(3) of the Federal High Court (Civil Procedure) Rules 2019, which requires a party to commence an action in the jurisdiction where the cause of action

arose (or where the defendant resides or carries on business). In these proceedings, the alleged damage in relation to the Bonga Spill occurred in Delta State, the claimants are stated to be resident in Delta State and the Communities are said to be located in Delta State.

313. Mr Fagbohunlu also relies on the decision in *Ibori & Anor v FRN & Ors* [2009] 3 NWLR (Pt.1128) 94, in which the Court of Appeal set aside a ruling delivered by the Federal High Court in Kaduna, for exceeding its territorial jurisdiction by wrongly assuming jurisdiction over a cause of action that arose in Delta State, and remitted the case to the Chief Judge of the Federal High Court for assignment to Delta State. When cross-examined about this decision, Professor Ojukwu dismissed it as a criminal case but the issue of jurisdiction is addressed in general terms by the court, including reference to the territorial jurisdictional limitations of civil matters. In the absence of any error of principle identified in the case, or any contrary decision at appellate level, I prefer the view of Mr Fagbohunlu on this issue.

Application of Delta State legislation

314. The division between the experts arises in relation to the applicability of state legislation to proceedings before the Federal High Court. The issue is whether, where a state law (such as the Delta State Limitation Law) exists, it displaces a statute of general application (including the 1623 Act) for the purpose of a relevant dispute before any Nigerian court; or whether it displaces such statute of general application only in respect of a dispute before the relevant state court and not the federal court.
315. Professor Ojukwu's opinion is that the Federal High Court, whether sitting in Delta State or any other state, will only apply national level, or federal law; state laws do not apply to the Federal High Court irrespective of their sitting division or venue. Therefore, the Delta State Limitation Law will only apply to cases before the Delta State High Court; not to cases before the Federal High Court, regardless where sitting. In respect of the claimants' claims, the Delta State Limitation Law does not apply because: (i) the Federal High Court of Nigeria has the constitutional jurisdictional mandate to adjudicate over the matter; (ii) the Interpretation Act of Nigeria is applicable in the Federal High Court, incorporating the 1623 Act in the absence of a specific federal limitation act; and (iii) the Delta State Legislator does not have the power to legislate for the Federal High Court on a jurisdictional matter such as the limitation of actions to be brought to the Federal High Court.
316. Mr Fagbohunlu's opinion is that the Delta State Limitation Law is applicable. Where a state limitation law exists, a statute of general application, including the 1623 Act, cannot be applied by a Nigerian court in a relevant dispute. Most states in Nigeria have enacted limitation statutes, including Delta, Bayelsa and Rivers States. In respect of the claimants' claims, since Delta State has a limitation law applicable to claims in tort, and there is no law that prevents the application of such state limitation law in the Federal High Court, it follows that the Delta State Limitation Law would apply and not the 1623 Act.
317. Mr Fagbohunlu's position is that statutes of general application do not apply in Nigeria where there is existing federal or local state law. He relies on the decision of the Supreme Court in *Chigbu v Tonimas* (2006) LPELR-846 (SC), in which the court

held that the applicable limitation period was set out in the state limitation law of Imo State and not the 1623 Act, per Niki Tobi JSC:

“Where a local statute is available and applies to a particular local situation, courts of law have no jurisdiction to go all the way to England to search for an English statute. This is because by the local statute, the law makers intend it to apply in the locality and not any English statute which is foreign and inapplicable. Much as I appreciate the colonial tie between England and Nigeria, it will seriously hamper and compromise our sovereignty if we continue to go on a borrowing 'spree', if I may so unguardedly call it, to England for the laws of that country without any justifiable reason. Nigeria is Nigeria and England is England. Statutes of England cannot apply to Nigeria as a matter of course, even the so-called statutes of general application.”

318. Although, as Professor Ojukwu observed, *Chigbu* concerned an appeal arising out of proceedings brought before the Imo State High Court, rather than the Federal High Court, there is a line of authority confirming that where there is a local limitation law, the courts, including the Federal High Court, will apply that local limitation law and not the residual 1623 Act.

319. First, in *Inspector Sunday Etim v Inspector General of Police* [2001] 11 NWLR 266, the Court of Appeal held that the Kaduna State limitation period applied to an action instituted before the Federal High Court Kaduna:

“...with regard to the reliance by the lower court on the Limitation Edict CAP 89 of the Laws of Kaduna State 1991... This law was made to provide for limitation of actions in Kaduna State. It therefore applied to any action filed in any court of law in Kaduna State including of course the Federal High Court sitting in Kaduna where the Appellants chose to file their action against the Respondents. The law applies to any action filed in any court operating within territorial area of Kaduna State without any regard as to who the parties in the action are.

...In this respect, the lower court was quite right applying the law to the present case before it in deciding on the Appellants' claims.”

320. Second, in *Tulip (Nigeria) Ltd v Noleggioe Transport Maritime SAS* [2011] 4 NWLR 254, the Court of Appeal held that the Federal High Court in Lagos correctly applied the Limitation Law of Lagos State to the enforcement of an arbitration award.

321. Third, in *Nigerian AGIP Oil Company Ltd v Ogbu* (2017), the Court of Appeal confirmed that the five-year limitation period under the Rivers State Limitation Law applied to a claim for compensation for oil pollution in the Federal High Court, Port Harcourt division, agreeing with the reasoning in *Etim* and *Tulip*.

322. Fourth, in *Comfort Asaboro v Pan Ocean Oil Corporation Nigeria Limited* (2017) LPELR-41558 (SC), the Supreme Court held that a claim filed in the Delta State High Court, relating to compensation for damage to land pursuant to the Petroleum Act and the Petroleum Drilling and Production Regulations, which did not prescribe any limitation period, was subject to the Limitation Law of Bendel State 1976 (applicable to Delta State at the material time).
323. Fifth, in *SPDC v West* (2018) LPELR-44290 the Court of Appeal held that the Rivers State Limitation Law was binding on all courts within the territorial area of that State and applied to a claim commenced in the Federal High Court, Port Harcourt, for compensation for oil pollution pursuant to the Oil Pipelines Act.
324. Sixth, in *Hamman v National Drug Law Enforcement Agency* (2018) LPELR-47021 the Court of Appeal confirmed that the Federal High Court in Lagos was correct to apply the Limitation Law of Lagos State, expressly rejecting an argument that sections 251 and 252 of the Constitution precluded the Federal High Court from applying state legislation.
325. Professor Ojukwu acknowledges that these decisions are authority for the proposition relied on by Mr Fagbohunlu, namely, that state limitation laws apply to the State High Court and the relevant Federal High Court, but he considers that *Etim* and the cases that followed were wrongly decided.
326. Support can be found for Professor Ojukwu's position in *Sampson v Shell Petroleum Development Company Nigeria Ltd* (2021). *Sampson* concerned a claim for compensation for oil pollution pursuant to the Oil Pipelines Act 1990 and the Petroleum Act 1990. The Court of Appeal held that the claim was not subject to the Akwa Ibom State Limitation Law on the basis that: (i) the claims were to enforce rights conferred by the Federal statutes; (ii) the Federal statutes laws did not provide for any limitation period; (iii) the claims were within the exclusive jurisdiction of the Federal High Court; (iv) in those circumstances, Akwa Ibom State could not legislate to take away a right conferred by the Federal statutes and, following the decision of the Court of Appeal in *Shell v Farah* (1995) 3 NWLR 148, the limitation period of six years in the 1623 Act applied.
327. Mr Fagbohunlu considers that *Sampson* is wrong and that the ongoing appeal has a high prospect of success on the grounds that: (i) it is contrary to the line of authority set out above, including the two Supreme Court decisions of *Asaboro* and *Chigbu* in which the Supreme Court held that federal legislation could be curtailed by a state limitation statute; (ii) the Court of Appeal in *Sampson* recognised the decision in *Etim* as correct on its facts, thereby implicitly accepting that state limitation legislation could apply to a case in the Federal Court; and (iii) the decision in *Sampson* was very narrow, subject to conditions that (a) the relevant statute was a federal statute and (b) the case was within the exclusive jurisdiction of the Federal High Court.
328. Having carefully considered the persuasive arguments by both experts, ultimately, I accept the opinion of Mr Fagbohunlu on this issue as carrying the weight of authority in his favour, including Supreme Court authority. The Court of Appeal decision in *Sampson*, although it supports Professor Ojukwu's position, is out of step with, and does not go so far as to overturn or declare wrongfully decided, the earlier line of authority.

Nigerian EEZ

329. It is common ground that the law applicable to the claims is to be determined in accordance with Rome II, as retained EU law. Article 15 of Rome II provides that the *lex causae* identified by Rome II will also govern the limitation period applicable to the claimants' claims.
330. Article 4(1) provides that the default choice of law rule for a non-contractual obligation is the law of the country in which the damage occurs:
- “Unless otherwise provided for in this Regulation, the law applicable to a non-contractual obligation arising out of a tort/delict shall be the law of the country in which the damage occurs irrespective of the country in which the event giving rise to the damage occurred and irrespective of the country or countries in which the indirect consequences of that event occur.”
331. However, where a non-contractual obligation arises out of environmental damage, Article 7 provides that the claimant may instead choose to base his or her claim on the law of the country in which the event giving rise to the damage occurred.
332. Article 25(1) of Rome II defines “country” as follows:
- “Where a State comprises several territorial units, each of which has its own rules of law in respect of non-contractual obligations, each territorial unit shall be considered as a country for the purposes of identifying the law applicable under this Regulation.”
333. The Bonga FPSO is located within the Nigerian EEZ. The claimants submit that for the purpose of Rome II, the Nigerian EEZ is a distinct country from Delta State. It falls within the control of the Federal Government of Nigeria and applies the Nigerian Federal law of torts, not Delta State law. As their claims arise out of an environmental disaster, the claimants are entitled by Article 7 of Rome II to choose the law applicable in the Nigerian EEZ as the *lex causae* governing their claims. The Federal High Court is the competent court for issues of oil spills arising from oil mining, oil fields, geological surveys and natural gas within the Nigerian EEZ. Therefore, a claim in tort concerning an oil spill which took place in the Nigerian EEZ, which causes damage to property exclusively in Delta State, would be subject to a six year limitation period under the 1623 Act.
334. The defendants submit that the Nigerian EEZ is not a “country” for the purpose of Article 25(1) of Rome II. It is not a territorial unit with its own rules of law in respect of non-contractual obligations. In *AG of the Federation v AG of Abia State & Ors* (SC 28/2001), the Supreme Court held that the territorial land of Nigeria ends at the low water mark, and that offshore zones are not part of the land territory of Nigeria but rather extra-territorial terrain belonging to Nigeria and subject to international law. There is no special civil jurisdictional regime applicable to the EEZ and there is no generally applicable limitation law in Nigeria. In any event, the experts agree that the Federal High Courts have exclusive jurisdiction in respect of oil spill claims in

Nigeria and the Federal High Court would apply the Delta State Limitation Law rather than the 1623 Act.

335. In my judgment, the claimants are not entitled to choose the law applicable in the Nigerian EEZ as the *lex causae* governing their claims, so as to rely on the 1623 Act.
336. Firstly, the country in which the alleged damage occurred is Delta State, making the law of Delta State the default choice of law under Article 4(1).
337. Secondly, although the claims are for environmental damage, and the event giving rise to the alleged damage occurred at the FPSO within the Nigerian EEZ, the EEZ is not a country within the meaning of Article 25(1). It is common ground that Nigeria is a Federation with 36 states plus the FCT of Abuja. The EEZ is not a territorial unit and does not comprise one of those states.
338. Thirdly, the EEZ does not have its own rules of law in respect of non-contractual obligations.

Conclusion on limitation

339. For the reasons set out above, the applicable limitation period to the claims under Nigerian Law is five years.

Issue 3 - Authority

340. RBL has confirmed that it has not received express individual authorisation to commence or pursue the Jalla 2 Proceedings from the 27,830 individual claimants listed on the claim form. Its position is that its authority to represent the claimants derives from five Powers of Attorney dated February 2021, said to be signed by the Five Kings, who have conferred on RBL authority to act in the Jalla 2 Proceedings. The claimants' case is that the Five Kings have vested authority as a matter of Nigerian customary law to make decisions on behalf of the individual claimants, including the power to bring these proceedings, which authority the Kings have delegated to the Bonga Oil Spill Steering Committee and OSPIVV.
341. The defendants challenge the authority of the claimants' solicitors, RBL, to act for the claimants in the Jalla 2 proceedings as a matter of Nigerian Law.
342. The claimants submit first, that under Nigerian Law the defendants have no standing to inquire into whether the claimants' legal representatives are properly instructed or to challenge RBL's authorisation to act; the Nigerian courts would not inquire into the authority of counsel to appear in court and the representation of parties would not affect the competence or jurisdiction of the court. Second, the claimants rely on the principle of customary law, namely, that in the case of community or family owned land, the owner or trustee of the land, whether a king, chief, community, village or family head, has authority to institute legal action to protect or seek compensation for damage to the land on behalf of individual occupants of the land without seeking or receiving their individual consent. Third, the kings, chiefs and community heads have delegated authority to RBL, through individuals or groups of individuals, to act in these proceedings.

343. The defendants submit first, that there are over 27,830 individuals named on the claim form in the Jalla 2 Proceedings, seeking to bring private, individual claims for damages arising out of the Bonga Spill, but most of them have not given individual consent for these proceedings to be brought in their names. Under Nigerian common law a lawyer cannot purport to bring proceedings on behalf of an individual in respect of that individual's rights, and bind them in those proceedings, unless the individual has given their consent. In the absence of authority, RBL cannot continue to purport to represent the claimants and the claim is liable to be struck out as an abuse of process. Second, the claimants have not adduced any compelling evidence establishing the existence of a rule of Nigerian customary law granting community rulers or leaders the ability to bind individuals to proceedings in respect of their private law rights, in circumstances where those individuals have not expressly authorised those claims to be brought in their names. Third, any such customary law rule would be unenforceable in the Nigerian courts on the grounds that it would offend principles of natural justice, equity and public policy.

Preliminary matters

344. Before turning to the material issues on authority, the court makes the following observations.
345. First, the claimants' contention that the defendants would not have standing to inquire into, or challenge, the claimants' legal representation if they were before the Nigerian courts does not preclude this court from determining whether RBL, a provider of legal services, has authority as a matter of substantive Nigerian law to conduct the proceedings issued in this jurisdiction on their behalf.
346. Second, the court's determination is limited to the agreed issue of authority; it does not extend to any consideration as to whether the rights to sue the defendants are vested in the individual claimants, communities or rulers of the communities and/or whether the claimants are proper parties to these proceedings, as individuals or in a representative capacity.
347. The questions to be addressed by the court can be summarised as follows:
- i) whether individual consent is required to bring proceedings on behalf of another individual under Nigerian law;
 - ii) whether the claimants have established a rule of customary law in Nigeria that a paramount ruler, or community leader, can give authority to RBL to institute these proceedings on their behalf;
 - iii) whether any such customary law as established would be struck down by the Nigerian courts on the grounds that it would be repugnant to principles of natural justice, equity and public policy;
 - iv) whether RBL has valid authority, as a matter of Nigerian law, to act for the claimants in the Jalla 2 Proceedings.

Consent required to bring proceedings under Nigerian Law

348. Mr Fagbohunlu's opinion is that under Nigerian law, an individual cannot purport to bring proceedings on behalf of another individual, and bind them in those proceedings, where the relevant individual has not given their consent for a claim to be brought in their name: *Chukwu v Chukwu* (2018) LPELR-45482 (CA); *ITT (Nigeria) Ltd v Okpon* [1989] 2 NWLR (Pt.103) 337; *Ogboru v Uduaghan* (2013) 13 NWLR (Pt.1370) 33; *FGN v Interstella Comms. Ltd* (2015) 9 NWLR (Pt.1463) 1. Any such action taken in proceedings with respect to an individual's rights and/or property without their consent would be a nullity. This is particularly the case where an individual's private law rights are concerned. To do so would be fundamentally unfair, and contrary to fundamental constitutional principles.
349. In their reply report, Professor Ojukwu and Chief Zimughan do not take issue with any of the authorities relied on. However, their position is that authority to act in legal proceedings can be express or implied. Further, the custom of Itsekiri and Ijaw people is clear that a King in those regions in Nigeria holds all the lands in his domain as a trustee and has a right to make any decision for the protection of any interest in the land. Consent to act on behalf of the individual community members to protect their community and individual interests in land within the community is intrinsic as part of the customary trusteeship.
350. Thus, it is common ground that express or implied consent is required to authorise an individual to bring proceedings on behalf of another individual. The issue that then arises is whether such consent can be implied through customary law.

Nigerian Customary Law

351. There is much common ground set out in the Authority Joint Statement prepared by Professor Ojukwu, Chief Zimughan and Mr Fagbohunlu.
352. Customary law in Nigeria consists of the customs and traditions of a group of people, community or tribe whose usage or acceptance is such that those customs and traditions become accepted as legal requirements or obligatory rules of conduct amongst that group of people, community or tribe.
353. Customary law in Nigeria may differ amongst tribes, communities or indeed from region to region.
354. The status and content of a rule of customary law is a question of fact to be proven before a Nigerian court. Proof of a customary law is governed by the procedure and principles set out in the Evidence Act 2011.
355. Section 16 of the Evidence Act 2011 states:
- “(1) A custom may be adopted as part of the law governing a particular set of circumstances if it can be judicially noticed or can be proved to exist by evidence.
- (2) The burden of proving a custom shall lie upon the person alleging its existence.”
356. Section 17 states:

“A custom may be judicially noticed when it has been adjudicated upon once by a superior court of record.”

357. Section 18 states:

“(1) Where a custom cannot be established as one judicially noticed, it shall be proved as a fact.

(2) Where the existence or the nature of a custom applicable to a given case is in issue, there may be given in evidence the opinions of persons who would be likely to know of its existence in accordance with section 73.

(3) In any judicial proceeding where any custom is relied upon, it shall not be enforced as law if it is contrary to public policy, or is not in accordance with natural justice, equity and good conscience.”

358. Section 19 states:

“Every fact is deemed to be relevant which tends to show how in particular instances a matter alleged to be a custom was understood and acted upon by persons then interested.”

359. Section 68 states:

“When the court has to form an opinion upon a point of ... customary law or custom ... the opinions upon that point of persons specially skilled in such ... customary law or custom ... are admissible.”

360. Section 70 states:

“In deciding questions of customary law and custom, the opinions of traditional rulers, chiefs or other persons having special knowledge of the customary law and custom and any book or manuscript recognised as legal authority by people indigenous to the locality in which such law or custom applies, are admissible.”

361. Section 73 states:

“(1) When the court has to form an opinion as to the existence of any general custom or right the opinions, as to the existence of such custom or right, of persons who would be likely to know of its existence if it existed are admissible.

(2) The expression “general custom or right” includes customs or rights common to any considerable class of persons.”

362. Thus, the relevant customary law may be established by judicial notice, where it has been adjudicated upon by a superior court of record, or established as a matter of fact,

by reference to expert opinion, including the opinions of traditional rulers, chiefs or other persons having special knowledge of the relevant customary law and custom.

Judicial notice of customary law

363. The claimants' argument is that Itsekiri and Ijaw Kings hold all the land in their Kingdoms on trust for their communities and the individuals who reside in them and that private property ownership is an unknown concept to Ijaw and Itsekiri custom. The claimants argue that it is this communal ownership of land, combined with the autocratic nature of power within the Niger Delta, that gives leaders the right to bind their constituents to legal proceedings that affect their constituents' private interests, with or without their knowledge or consent.
364. Professor Ojukwu and Chief Zimughan rely on cases in which similar customary laws have been judicially recognised, such as *Princess Bilewu Oyewunmi & Anor v Amos Owoade Ogunesan* (1990) LPELR-2880 (SC), in which the Supreme Court accepted the Benin custom that the Oba of Benin is legal owner of all lands in Benin. Also relied on is the decision in *Attorney-General Kwara State & Anor v His Royal Highness Oba Michael D Oyedele Ariwajoye I & Anor* (2000) LPELR-9934 in which the Court of Appeal recognised the right of the Oba of Isolo-Opin to sue in his capacity as a traditional ruler and owner of communal properties and the custodian of the customs and tradition in Kwara State.
365. The claimants' legal experts consider that the Itsekiri and Ijaw Kings are owners of their communal lands and exercise ultimate authority and control over them, in a similar manner to the above cases. On that basis they seek to argue that the principle of judicial notice should apply to the customary law relied on by the claimants in these proceedings. The principle of judicial notice in Nigerian law does not demand that every custom must first be brought to court before it can be accepted as judicially noticed.
366. Contrary to that view, however, is the Authority Joint Statement in which the experts agree that customary law differs between different tribes and communities. Therefore, it should not be assumed that a similar custom would be established across different tribes and communities. In cross-examination, Chief Zimughan accepted that there was no authority in which the courts have recognised the power of Itsekiri or Ijaw Kings to authorise claims in respect of individual rights without their consent.
367. Although the cases relied on by the claimants' experts provide examples of similar cases where the courts have recognised similar rules to those sought to be established in these proceedings, there is no authority before the court where the alleged rule of customary law has been adjudicated upon by a superior court of record in Nigeria. Therefore, I accept the opinion of Mr Fagbohunlu that the rule of customary law relied on by the claimants has not been judicially noticed as required by section 17 of the Evidence Act.

Proof of customary law by evidence

368. The claimants rely on the direct evidence of two witnesses, the Honourable Olayjemi Johnson Nanna and Chief Rumson Victory Baribote, in support of their case that

authority to RBL could be given by community rulers on behalf of the individual claimants.

369. The Honourable Olayjemi Johnson Nanna is an elder of the Koko community located on the right bank of the Benin River in Delta State. He belongs to the Itsekiri Tribe of the Warri Kingdom which is mainly located in the Niger Delta region of Nigeria. He is 85 years old and a member of the Elders Council in the Koko Community. He was previously employed by the Ministry of Education Office (Warri) as a teacher and after retirement, he was appointed by the Delta State Government as a Lay Judge for the Area Customary Court in Koko. He is a writer of Itsekiri history, tales and folklore.
370. He explains in his witness statement that the population of the Niger Delta is made up of many different tribes, including Itsekiri, Ijaw, Ibo, Isoko, Urhobo and many others. The history behind the differing tribes is complex, but following the agreement for Nigerian Independence in 1958, the Federal and Regional Government of Nigeria confirmed that State Governments (local Government) could form 'Kingdoms' with the ability to appoint a Monarch to accord with native law and custom.
371. In the Warri Kingdom the highest ranking individual is the Olu, King of Warri who is the Itsekiri monarch and the head of the Itsekiri tribe. In his role as King, the Olu holds the land of Warri on trust for the individuals and communities who live and work off the land, the Itsekiri people.
372. Land in Warri Kingdom is divided into three classes. The first is 'Inalienable Land', which is considered sacred or holy and includes the burial grounds of the departed Kings of Warri. The second is 'Ancestral Land', which is 'royal land' occupied by the King, such as the 'Ode Itsekiri' the traditional palace of the Olu. The third class of land is 'Communal land'. This land is occupied by Itsekiri communities and individuals who live and work in Warri.
373. Communal land is divided between various communities. Many of these communities (especially those in the most rural areas) have a long-standing tie to the land and so the boundaries that exist between land are well established. It is common for families within a community to 'pass on' their occupied portion of communal land to their family members. This process is overseen by the community leaders who have the delegated authority (given by the King) to establish ownership rights and governance of communal land. Any decision the community leaders take concerning communal land is binding on members of the community, although members are able to appeal to the King, as holding the ultimate authority. The King's decision (whether or not he is in agreement with the community leaders) is final and binding on all. There are no limits to the King's power to make decisions on behalf of people in the Kingdom, including the power to bring legal proceedings on behalf of an individual within the community, although he would not override individual rights.
374. The Honourable Johnson Nanna explains that it was within the power of the Olu, King of Warri to delegate authority to the Bonga Oil Spill Steering Committee/Coalition of the Bonga Oil Spill Communities and OSPIVV to bring, prosecute and manage the proceedings through a power of attorney.

375. Chief Rumson Victory Baribote is an elder of the Bomadi community, located in Bomadi LGA of Akugbene Mein Clan, Delta State, Nigeria. The Akugbene Mein Clan is a sub-set of the Ijaw tribe. The Ijaw King of this tribe is His Royal Majesty Pere S.P Luke-Kalanama-VIII, known as the 'Ogiame'. Chief Rumson is the 'High Chief' on the committee of Kingmakers for the Akugbene Mein Clan.
376. Chief Baribote explains in his evidence that in the Niger Delta, land is divided between two main tribes, Itsekiri and Ijaw. The Ijaw structure of land-ownership is that the King as the ultimate authority holds land on trust. There are multiple Ijaw monarchs and each King is recognised as the paramount ruler by the Ijaw communities who fall within that King's domain, established by historically recognised boundaries. The land is occupied by communities and by individuals who pay a levy or tax the King to use the farm lands and fishing channels. All communal land matters are decided by the King who has ultimate authority. He explains that anyone can bring a legal claim with the permission of the King if it concerns the community.
377. I find the evidence of the above witnesses to be genuine and persuasive, based on their extensive knowledge and experience of the custom and tradition in their respective communities. It amounts to cogent evidence demonstrating the existence of a customary law rule that would allow the Five Kings to bind individuals in the communities to legal proceedings in respect of the communal lands and rights of those communities. However, there is no evidence that such customary law rule extends to the private law rights of the individuals. Indeed, the Honourable Johnson Nanna explained to the court that the King would not override individual private rights, as opposed to community rights. Significantly, the claimants' experts have not identified any examples of this, or similar, customary law being used in practice to make decisions affecting the private law rights of individuals within a particular kingdom or community.

Enforceable customary law

378. It is common ground that if a rule of custom has been proven to exist, a Nigerian court may decline to enforce that rule in a dispute if to do so would be repugnant to natural justice, equity, and good conscience or incompatible with a superior rule of law in force for the time being.
379. I reject the defendants' argument that any rule of custom established by the claimants would violate the Constitution or other laws of Nigeria. As Professor Ojukwu notes, the custom relied on by the claimants in this case, to the limited extent established, as set out above, is similar to the customs decided on by superior courts in other cases. Where a custom has been applied by the courts, it is unlikely to be found to be repugnant to natural justice, equity, and good conscience or incompatible with a superior rule of law.

Summary on Authority

380. Drawing the above threads together, my findings on the issue of authority are that firstly, under Nigerian common law, a lawyer is not entitled to bring proceedings on behalf of an individual in respect of that individual's rights, and bind them in those

proceedings, where the relevant individual has not given their consent for a claim to be brought in their name.

381. Secondly, the claimants have discharged their burden of establishing a customary rule that the rulers or Kings have absolute power in respect of matters concerning communal land, which they hold on trust for the community, entitling them to commence legal proceedings affecting the communal land rights of their constituents, without obtaining their consent. Such customary law rule would be enforceable in the Nigerian courts and would not be struck down as inconsistent with Nigerian constitutional norms or as repugnant to natural justice.
382. Thirdly, the claimants have not established any customary law whereby the rulers or Kings could give authority to RBL to commence or pursue legal proceedings in respect of the private law rights of individuals without their consent.
383. It follows that, as a matter of Nigerian Law, the claimants' solicitors have authority to act for the claimants in the Jalla 2 Proceedings to the extent that (i) individual claimants, such as Mr Jalla and Mr Chujor, have given their consent; or (ii) the claims are community claims in respect of communal land rights; but (iii) not otherwise, in respect of individual claims or private individual rights.

Conclusions

384. For the reasons set out above, my conclusions are as follows:

Issue 1 - Limitation

- i) The applicable limitation period to the claims under Nigerian Law is five years.

Issue 2 – Date of Damage

- ii) Assuming oil from the Bonga Spill reached the Nigerian shoreline, the claimants have failed to establish that Bonga oil became trapped; remobilised years later; migrated upstream and inland; and impacted any of the Communities (as marked on the Communities Map) for the first time on the following dates:
- a) Ogheye-Uton on or around 1 June 2014;
 - b) Abe-Bateren on or around 20 June 2014;
 - c) Isuku-Gbene on or around 1 September 2015;
 - d) Tonbrapade-Gbene on or around 1-10 September 2015.

Issue 3 - Authority

- iii) As a matter of Nigerian Law, the claimants' solicitors have authority to act for the claimants in the Jalla 2 Proceedings to the extent that:

- a) individual claimants, such as Mr Jalla and Mr Chujor, have given their consent; or
- b) the claims are community claims in respect of communal land rights; but
- c) not otherwise, in respect of individual claims or private individual rights.

385. Following hand down of this judgment, the hearing will be adjourned to a date to be fixed for the purpose of any consequential matters, including any applications for interest, costs or permission to appeal, and any time limits are extended until such hearing or further order.

