IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

DOWNHOLE TECHNOLOGY LLC,	)	
	)	
Plaintiff,	)	Case No.: 4:19-cv-00683
	)	
v.	)	JURY TRIAL DEMANDED
	)	
MAVERICK DOWNHOLE TECHNOLOGIES INC., and WELLFIRST TECHNOLOGIES, INC.	)	
	)	
Defendants.	)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Downhole Technology LLC ("Plaintiff" or "DHT") files this Complaint for Patent Infringement against Maverick Downhole Technologies Inc. ("Maverick") and WellFirst Technologies, Inc. ("WellFirst") (where Maverick and WellFirst are collectively referred to as "Defendants") and hereby alleges as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement under the patents laws of the United States, Title 35, of the United States Code. DHT asserts that Defendants infringe U.S. Patent Nos. 9,562,416; 9,719,320; and 9,976,382 (the "Asserted Patents"). DHT is seeking damages, enhanced damages, prejudgment interest, attorneys' fees, and any other relief that is warranted under the applicable law against Defendants. In addition, DHT is seeking an injunction against Defendants' use of its patents.

PARTIES

2. Plaintiff DHT is a limited liability company organized and existing under the laws of the state of Texas, having its corporate offices and principal place of business at 7123 Breen Drive, Houston, Texas 77086.

3. Defendant Maverick is an incorporated company organized and existing under the laws of the province of Alberta, Canada, having its registered office at 1600, 421 - 7th Avenue SW Calgary, Alberta, T2P 4K9 Canada, according to information with the government of Alberta's Corporate Registration System. Maverick's corporate offices and principal place of business are located at 4426 97th Street, NW, Edmonton, Alberta T6E 5R9 Canada.

4. Defendant WellFirst is an incorporated company organized and existing under the laws of the state of Texas, having a mailing address of 7850 N Sam Houston Pkwy W. Suite 100 Houston, TX 77064 and Registered Office street address of 410 S Trade Center Parkway, Suite A12 Conroe, TX 77385, per records with the Texas Secretary of State. WellFirst's website also lists two Texas field offices, 2209 E Loop 281 Longview, TX 75605 and 420 W. Oppenheimer Uvalde, TX 78801.

Field Office
LONGVIEW, TX

2209 E Loop 281
Longview, TX 75605
(+1) 903-757-6300
DBROOKS@WELLFIRST.COM

Field Office
SOUTH TEXAS

420 W. Oppenheimer
Uvalde Texas 78801
(+1) 830-317-0456
JELDER@WELLFIRST.COM

See http://wellfirst.com/contact.php (last visited February 20, 2019)

JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338 because this is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 100 *et seq.*

6. This Court has general and specific personal jurisdiction over WellFirst because (i) it is a legal entity formed under the laws of the state of Texas and maintains an office within this District, (ii) it is regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided in Texas and in this District, and (iii) it has committed acts of infringement within the state of Texas, including the making, using, selling, offering for sale, or importing of infringing frac plugs in this District.

7. This Court has specific personal jurisdiction over Maverick because Maverick has committed acts of infringement within the state of Texas, including the making, using, selling, offering for sale, or importing of infringing frac plugs in this District.

8. For example, Maverick's activities in Texas are confirmed by a PowerPoint presentation that specifically states Maverick's Cyclops Frac Plug has a "[r]ecent run history" in Midland, Texas; activity necessarily involving the use, sale, and/or distribution of Maverick's infringing Cyclops Frac Plug in the state of Texas. Furthermore, Maverick is engaged in business with its United States marketing partner, WellFirst, a Texas corporation with both its registered office and a place of business in this District.

Exhibit A (Maverick Cyclops PowerPoint Presentation, slide 19)

9. Venue is proper in this District under 28 USC §§ 1391 and 1400(b) for WellFirst because i) it is an entity formed under the laws of the state of Texas, ii) it has an established place of business in this District, and iii) it has committed acts of infringement within this District.

10. Venue is proper in this District under 28 USC §§ 1391 and 1400(b) for Maverick because this Court has personal jurisdiction over Maverick, and its status as a foreign corporation which makes venue proper in any judicial district, even in patent cases.

FACTUAL BACKGROUND

11. DHT is a leading provider in the United States and internationally of plugs for oil and gas hydraulic fracturing operations, i.e., "frac plugs." DHT provides some of the most reliable frac plugs in the industry.

12. Hydraulic fracturing, or "fracking," is a method for extracting oil and gas from primarily impermeable rock formations, such as shale. Fracking is different than conventional drilling because its uses explosives ("perforations") and "fracking fluid" (water, sand, and

chemicals) to create and hold open fractures within the shale to allow the oil and gas to permeate and be extracted.

13. At certain times during fracking operations, portions of the wellbore must be plugged and contained to perform certain well stimulation treatments, such as the perforations of the shale. These plugs are called "frac plugs."

14. In 2010, the founders of DHT decided to use their in-depth understanding of the equipment, procedures, and economic drivers of hydraulic fracturing to develop a new, high-quality, high-performance composite frac plug. Ultimately, DHT designed its Boss Hog Frac Plugs. A genuine advance in composite plug technology, DHT's Boss Hog Frac Plugs are designed for unsurpassed efficiency and reliability.

15. Because of the innovative design of DHT's Boss Hog Frac Plugs, the plugs have fewer than half the parts of competitive plugs, are shorter than typical plugs, are easier to handle, are less likely to lose components, and produce significantly fewer cuttings during drillout. DHT's Boss Hog Frac Plugs have never experienced premature setting—a significant concern with frac plugging—and require less run and drillout time than competitor plugs. To date, DHT's customers have used more than 190,000 Boss Hog Frac Plugs in unconventional oil and gas reservoirs, which have saved customers hundreds of thousands of dollars per well.

16. DHT has applied for and obtained many patents to protect its technologies—and its research and development investment—from improper use and exploitation by competitors. DHT maintains a robust patent portfolio and marks its products with its patents so that its competitors are on notice of the products' patent protection.[1] DHT's Boss Hog Frac Plugs are virtually marked with the Asserted Patents and practice the claims of the Asserted Patents.

[1] *See* https://www.downholetechnology.com/about-downhole-technology/patents.

17. On information and belief, Defendants are "downhole technology" companies that sell a wide range of downhole tools—including frac plugs—as well as downhole services. On information and belief, and according to Maverick's website, Maverick sells its downhole tools and services worldwide. On information and belief, and according to WellFirst's website, WellFirst sells its downhole tools and services in at least the United States and Canada.

18. As such, Defendants are direct competitors of DHT in the hydraulic fracturing—specifically the frac plug industry—within at least the United States.

19. On information and belief, Maverick sells a number of different frac plugs, including the Ultron Frac Plug, the Cyclops Frac Plug, and the Megatron Frac Plug.

20. On information and belief, Maverick makes, uses, sells, offers for sale, or imports a First Generation and Second Generation Cyclops Frac Plug in the United States (the First and Second Generation Cyclops Frac Plugs are collectively referred to as the "Infringing Frac Plugs").

21. Upon information and belief, based on the Defendants' presentations comparing the Infringing Frac Plugs, the only material difference between the First and Second Generation Cyclops Frac Plug is the construction of the metal slip in the Second Generation Cyclops Frac Plug.

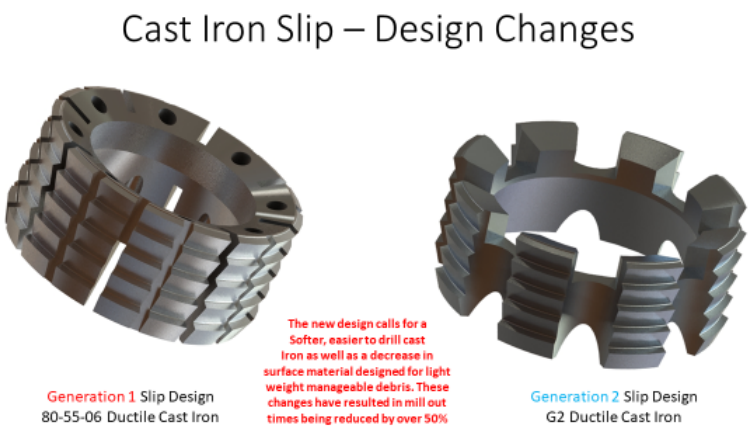
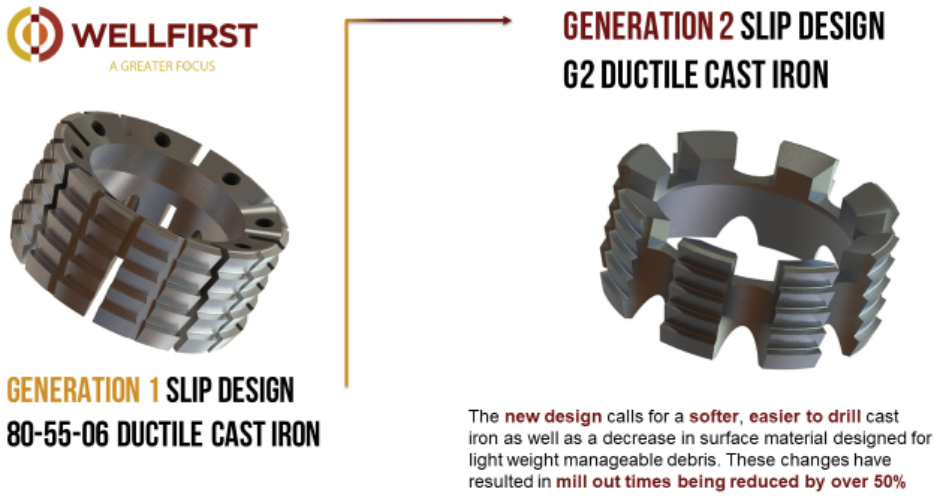


Exhibit A (Mavericks Cyclops PowerPoint Presentation, slide 17).

22. On information and belief, at least the Infringing Frac Plugs infringe the Asserted Patents.

23. On information and belief, WellFirst makes, uses, sells, offers for sale, or imports Maverick's Infringing Frac Plugs in the United States.



See **Exhibit B** (WellFirst PowerPoint Presentation, slide 5)

24. On information and belief, the Infringing Frac Plugs sold by WellFirst are sourced from Maverick and are the same, or not materially different from, as the Infringing Frac Plugs

Maverick sells and offers for sale. On information and belief, WellFirst refers to the Maverick Infringing Frac Plugs as "Composite Frac Plugs." *See* **Exhibit B** (WellFirst PowerPoint Presentation).

25. In 2016, representatives of Maverick and DHT had communications concerning their composite frac plug businesses. During those communications, Maverick's representative acknowledged the existence of DHT's patent portfolio covering composite frac plugs, while denying that Maverick's products infringed any of those patents. Maverick also raised the possibility of a business collaboration between Maverick and DHT. DHT ultimately decided not to pursue a business collaboration with Maverick.

26. On information and belief, WellFirst should have been aware of DHT's patents in view of DHT's marking of its products, and in view of WellFirst's relationship and collaboration with Maverick.

COUNT I – DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 9,562,416

27. The above paragraphs 1 - 26 are incorporated by reference as if fully restated herein.

28. On February 7, 2017, United States Patent No. 9,562,416 (the "'416 patent") was duly and legally issued for an invention titled "Downhole Tool with One-Piece Slip." A true and correct copy of the '416 patent is attached hereto as Exhibit **C** ('416 Patent). DHT is the owner by assignment of the entire right, title, and interest in and to the '416 patent, including the sole right to enforce the '416 patent. At all times relevant to this Complaint, DHT has complied with all applicable patent marking requirements.

29. On information and belief, Defendants have directly infringed—literally or under the doctrine of equivalents—at least claim 1 of the '416 patent by making, using, selling,

offering to sell, or importing into the United States downhole wellbore frac plugs covered by the asserted claims in violation of 35 U.S.C. § 271(a), including but not limited to the Infringing Frac Plugs. Claim 1 is provided below:

A downhole tool useable for isolating sections of a wellbore, the downhole tool comprising:

a mandrel made of a composite material, the mandrel further comprising:

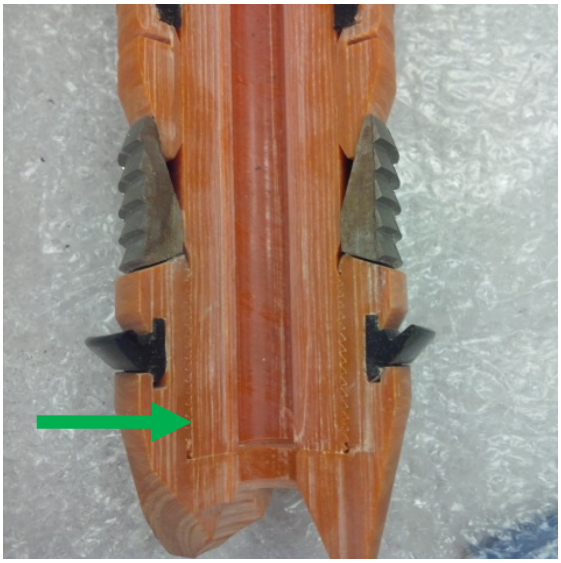
a distal end; a proximate end; and an outer surface, wherein the outer surface at the distal end is configured with a set of threads, and wherein the outer surface comprises a first outer diameter at the distal end, a second outer diameter at the proximate end, and an angled linear transition surface there between; a bearing plate disposed around the mandrel, the bearing plate comprising an angled inner plate surface configured for engagement with the angled linear transition surface; a composite slip disposed around the mandrel proximate to the proximate end, the composite slip further comprising: a composite slip body having a one-piece configuration, an outer slip surface, an inner slip surface, and a plurality of grooves disposed therein, wherein at least one of the plurality of grooves forms a lateral opening in the composite slip body that is defined by a first portion of slip material at a first slip end, a second portion of slip material at a second slip end, and a depth that extends from the outer slip surface to the inner slip surface; a first cone disposed around the mandrel, and proximate to the composite slip; a metal slip disposed around the mandrel, the metal slip farther comprising columns of serrated teeth; a second cone disposed around the mandrel, and proximate to a first side of the metal slip; a sealing element disposed around the mandrel, and between the first cone and the second cone; and a lower sleeve disposed around the mandrel, and proximate to a second side of the metal slip, wherein the lower sleeve is configured with sleeve threads that are coupled with the set of threads, and wherein the second outer diameter is larger than the first outer diameter.

First Generation Cyclops Frac Plug

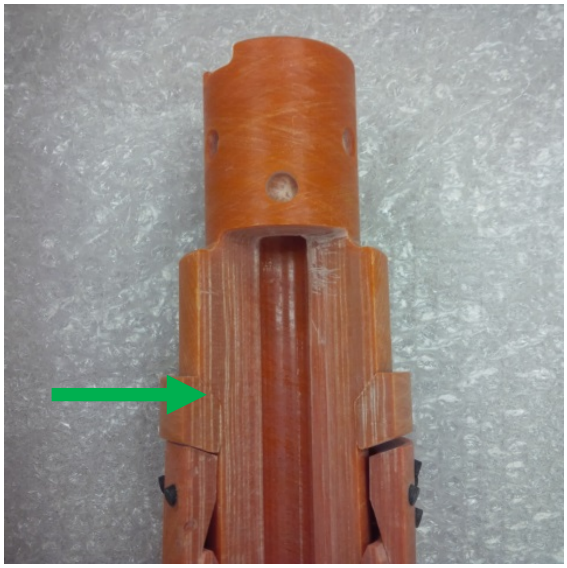
30. The First Generation Cyclops Frac Plug includes a mandrel made of a composite material.

31. The composite mandrel in the First Generation Cyclops Frac Plug has a distal end and a proximate end, with outer diameters at the distal and proximate ends. The distal end of the

mandrel includes a set of threads. The composite mandrel also includes an angled linear transition surface between the outer diameters of the distal end and the proximate end.

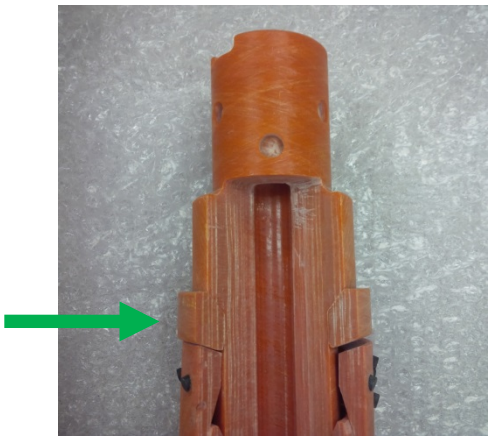


Distal end with set of threads



Proximate end with angled linear transition

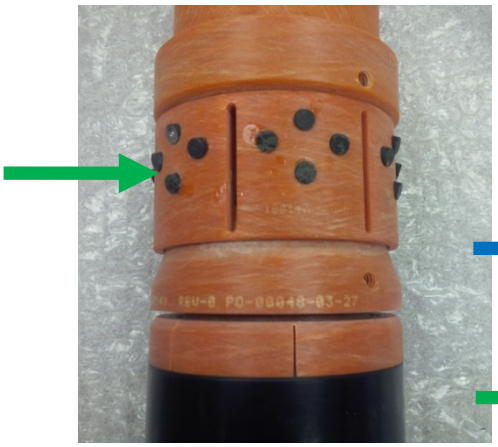
32. The First Generation Cyclops Frac Plug includes a bearing plate with an angled inner plate surface that is configured to engage with the mandrel's angled linear transition surface.



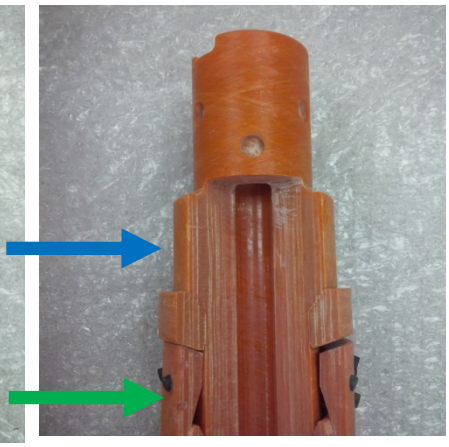
Bearing Plate with angled inner plate surface

33. The First Generation Cyclops Frac Plug has a composite slip disposed around the mandrel proximate to the proximate end. The composite slip includes a one-piece configuration, an outer slip surface, an inner slip surface, and a plurality of grooves disposed on the composite

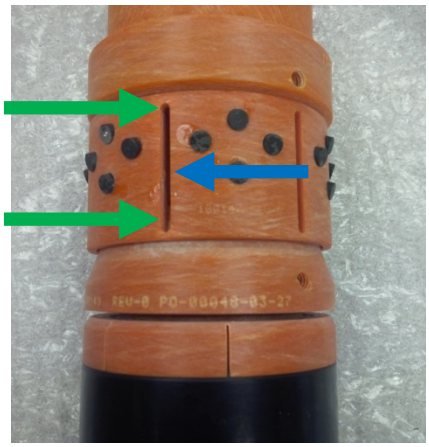
slip. At least one of the grooves forms a lateral opening in the composite slip body. The groove is defined by a first portion of slip material at a first slip end, a second portion of slip material at a second slip end, and a depth that extends from the outer slip surface to the inner slip surface.



One-piece composite slip with grooves

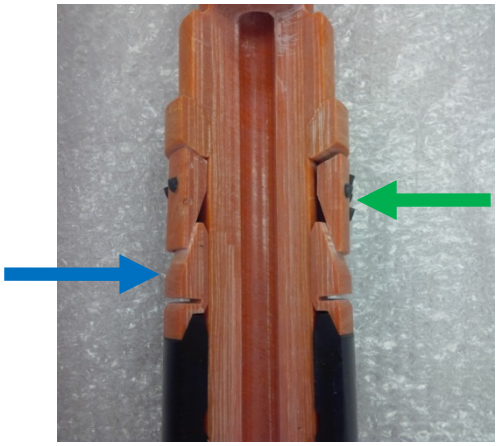


Composite slip (green arrow) proximate to proximate end (blue arrow)



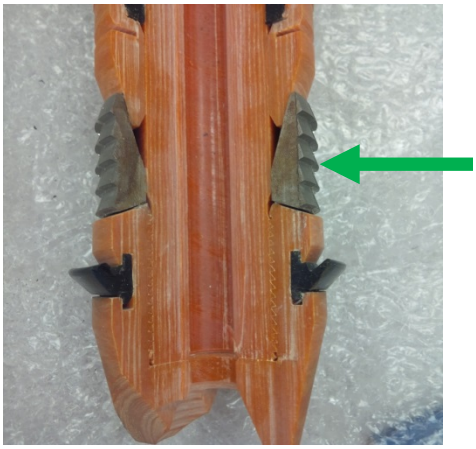
Defined groove with depth

34. A first cone disposed around the mandrel and proximate to the composite slip.



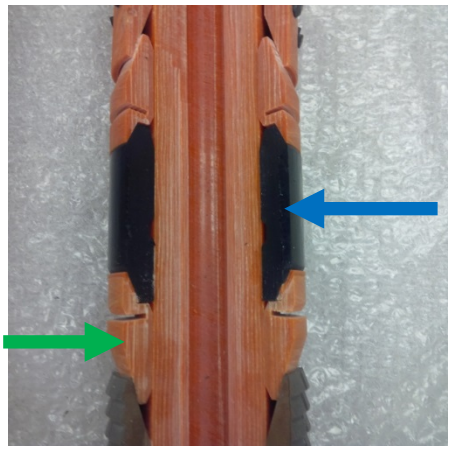
First cone (blue arrow) proximate composite slip (green arrow)

35. A metal slip is disposed around the mandrel, with the metal slip having columns of serrated teeth.



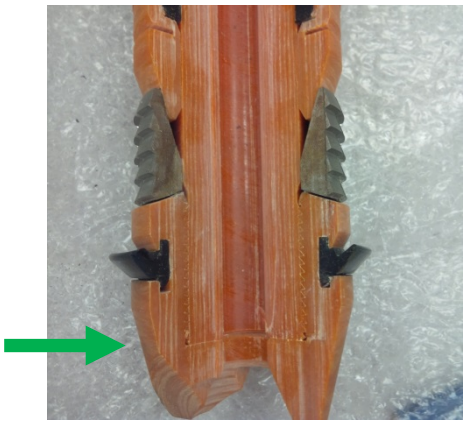
Metal slip with columns of serrated teeth

36. A second cone is adjacent to the metal slip and disposed around the mandrel, and the sealing element is disposed between the first and second cones.



Second cone (green arrow) and sealing element (blue arrow)

37. The lower sleeve is threaded and coupled with the set of threads in the distal end of the mandrel. The lower sleeve is proximate to a second side of the metal slip. The outer diameter of the proximate end is larger than the outer diameter of the distal end.



Lower sleeve with threads

Proximate end with larger diameter (green) than distal end (blue)

Second Generation Cyclops Frac Plug

38. The Second Generation Cyclops Frac Plug includes a mandrel made of a composite material.

39. The composite mandrel of the Second Generation Cyclops Frac Plug includes a distal end and a proximate end, with outer diameters at the distal and proximate ends. The distal end of the mandrel is configured with a set of threads. On information and belief, the composite mandrel also includes an angled linear transition surface between the outer diameters of the distal end and the proximate end.

Distal end with set of threads

40. The Second Generation Cyclops Frac Plug includes a bearing plate. On information and belief, the Second Generation Cyclops Frac Plug's bearing plate includes an angled inner plate surface configured to engage with the mandrel's angled linear transition surface.

Bearing plate

41. The Second Generation Cyclops Frac Plug has a composite slip disposed around the mandrel proximate to the proximate end. The composite slip includes a one-piece configuration, an outer slip surface, an inner slip surface, and a plurality of grooves disposed on the composite slip. At least one of the grooves forms a lateral opening in the composite slip body. The groove is defined by a first portion of slip material at a first slip end, a second portion of slip material at a second slip end, and a depth that extends from the outer slip surface to the inner slip surface.

One-piece composite slip with grooves

Defined groove with depth

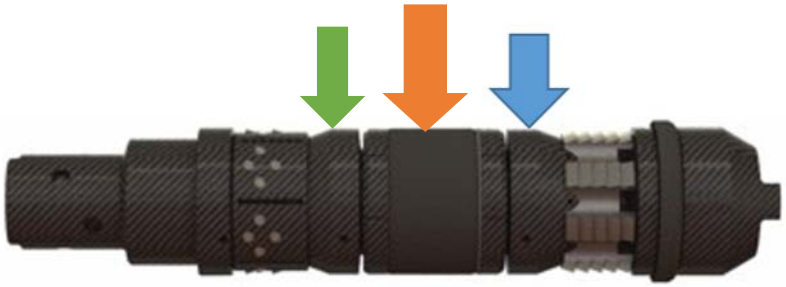
42. The Second Generation Cyclops Frac Plug includes a first cone disposed around the mandrel proximate to the composite slip

First cone (blue arrow) proximate to composite slip (green arrow)

43. A metal slip with serrated teeth is disposed around the mandrel of the Second Generation Cyclops Frac Plug.

Metal Slip

44. A second cone is adjacent to the metal slip and disposed around the mandrel, and the sealing element is disposed between the first and second cones.



Sealing element (orange arrow) between first (green arrow) and second (blue arrow) cones

45. The Second Generation Cyclops Frac Plug includes a lower sleeve disposed around the mandrel coupled to the set of threads on the mandrel. On information and belief, the Second Generation Cyclops Frac Plug second outer diameter is larger than the first outer diameter.

Lower sleeve (orange arrow) around a set of threads (green arrow)

46. Defendants, at the very least, have had notice and knowledge of the ’416 patent, and their infringing conduct and products from the filing and receipt of this Complaint.

47. As such, upon information and belief, Defendants' affirmative acts of making, using, selling, offering for sale, or importing the Infringing Frac Plugs have induced and continued to induce the direct infringement of the '416 patent under 35 U.S.C. § 271(b) by a number of direct infringers, including, but not limited to, Defendants' customers, users, distributors, affiliates, employees, and service providers. This would include the three entities listed in Maverick's PowerPoint presentation regarding recent drill runs in Midland, Texas. *See* **Exhibit A** (Maverick Cyclops PowerPoint Presentation). Defendants performed the inducing acts with knowledge of the '416 patent and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

48. Upon information and belief, Defendants' have contributed to and continue to contribute to the infringement of the '416 patent under 35 U.S.C. § 271(b) by making, using, selling, offering for sale, or importing the Infringing Frac Plugs with knowledge that the Infringing Frac Plugs were and are especially manufactured or adapted for use in infringing the '416 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing uses. Defendants performed the contributing acts with knowledge of the '416 patent and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

49. Based on Defendants' knowledge of the '416 patent and their infringing conduct, Defendants are aware that they do not have a license to practice the claims of the '416 patent. Defendants are aware that, by continuing to improperly use DHT's technology without a license, their conduct constitutes infringement of the '416 patent. As such, Defendants' continued infringement is and has been willful and deliberate.

50. Defendants' past and continuing infringement of the '416 patent has caused harm to DHT and DHT is entitled to recover damages from Defendants, in an amount not less than a reasonable royalty. In addition, such damages should be enhanced under 35 U.S.C. § 284 based on Defendants' willful conduct.

51. Defendants should also be permanently enjoined from practicing the claims in the '416 patent. On information and belief, Defendants are direct competitors of DHT and their Infringing Frac Plugs compete directly with DHT's Boss Hog Frac Plug for oil and gas hydraulic fracturing operations throughout the United States. Defendants' infringement and conduct has caused, and likely will cause, irreparable harm to DHT requiring a permanent injunction, including, but not limited to, loss in value of DHT's patented technology, lost market share, price erosion, harm to DHT's reputation and business goodwill in the fracking industry, and lost market opportunities and business relationships.

COUNT II – DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 9,719,320

52. The above paragraphs 1 - 26 are incorporated by reference as if fully restated herein.

53. On August 1, 2017, United States Patent No. 9,719,320 (the "'320 patent") was duly and legally issued for an invention titled "Downhole Tool with One-Piece Slip." A true and correct copy of the '320 patent is attached hereto as **Exhibit D** ('320 Patent). DHT is the owner by assignment of the entire right, title, and interest in and to the '320 patent, including the sole right to enforce the '320 patent. The '320 patent is in the same patent family as the '416 patent. At all times relevant to this Complaint, DHT has complied with all applicable patent marking requirements.

54. On information and belief, Defendants have directly infringed—literally or under the doctrine of equivalents—at least one claim 1 of the '320 patent by making, using, selling, offering to sell, or importing into the United States downhole wellbore frac plugs covered by the asserted claims in violation of 35 U.S.C. § 271(a), including but not limited to the Infringing Frac Plugs. Claim 1 is provided below:

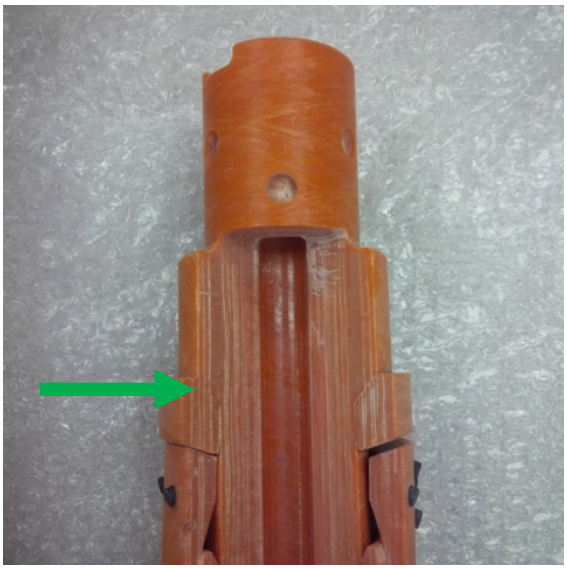
A downhole tool for use in a wellbore, the downhole tool comprising:

> a mandrel made of a composite material, the mandrel further comprising: a distal end; a proximate end; and an outer surface, wherein the mandrel comprises a first outer diameter at the distal end, a second outer diameter at the proximate end, and an angled linear transition surface therebetween, and wherein the second outer diameter is larger than the first outer diameter; a bearing plate disposed around the mandrel, the bearing plate comprising an angled inner plate surface configured for engagement with the angled linear transition surface; a first slip disposed around the mandrel proximate to the distal end; a composite slip disposed around the mandrel proximate to the proximate end, the composite slip further comprising: a composite slip body having a one-piece configuration, an outer slip surface, an inner slip surface, and a plurality of grooves disposed therein, wherein at least one of the plurality of grooves forms a lateral opening in the composite slip body that is defined by a first portion of slip material at a first slip end, a second portion of slip material at a second slip end, and a depth that extends from the outer slip surface to the inner slip surface; a first cone disposed around the mandrel, and proximate to the composite slip; a sealing element disposed around the mandrel; and a lower sleeve coupled to the mandrel, and proximate to a second side of the first slip.

First Generation Cyclops Frac Plug

55. The First Generation Cyclops Frac Plug includes a composite mandrel.

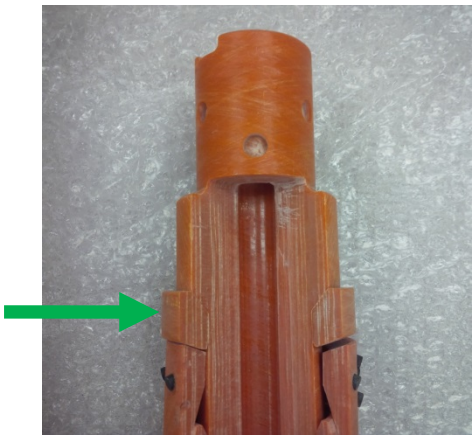
56. The composite mandrel in the First Generation Cyclops Frac Plug has a distal end and a proximate end, with outer diameters at each end. The mandrel has an angled linear transition surface between the distal end and the proximate end. The outer diameter of the proximate end is larger than the outer diameter of the distal end.



Proximate end with angled transition surface

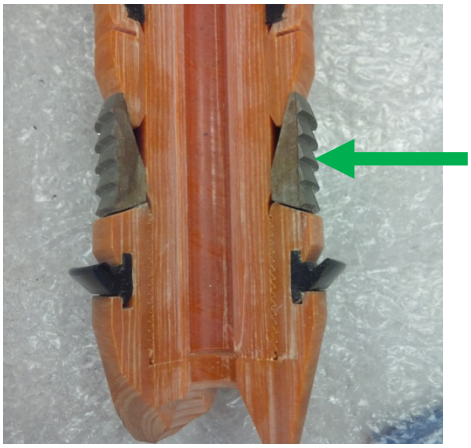
Proximate end with larger diameter (green arrows)

57. The First Generation Cyclops Frac Plug includes a bearing plate with an angled inner plate surface that is configured to engage with the mandrel's angled linear transition surface.



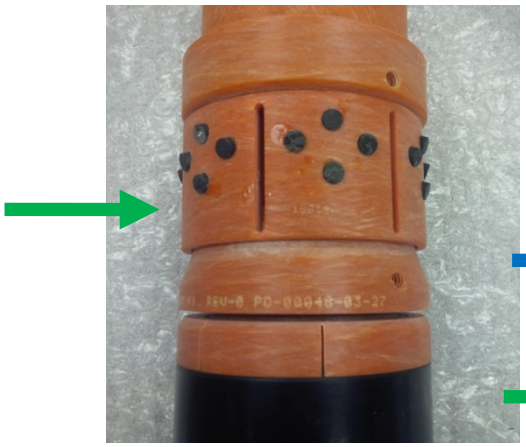
Bearing Plate

58. The first slip is disposed around the mandrel and proximate to the distal end.

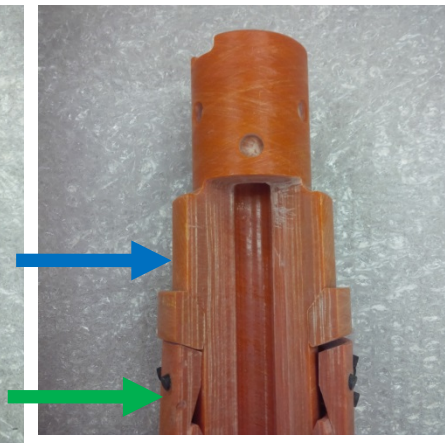


First slip proximate to distal end

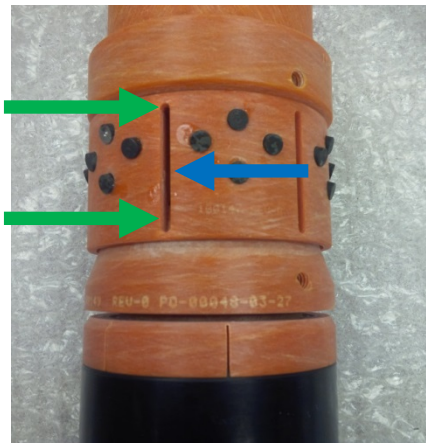
59. The First Generation Cyclops Frac Plug has a composite slip disposed around the mandrel, which is adjacent to the proximate end of the mandrel. The composite slip is a one-piece design with a plurality of grooves forming a lateral opening in the slip, defining first and second portions of slip material at both slip ends, and a depth between the outer and inner slip surface. A first cone piece is disposed adjacent to the composite slip.



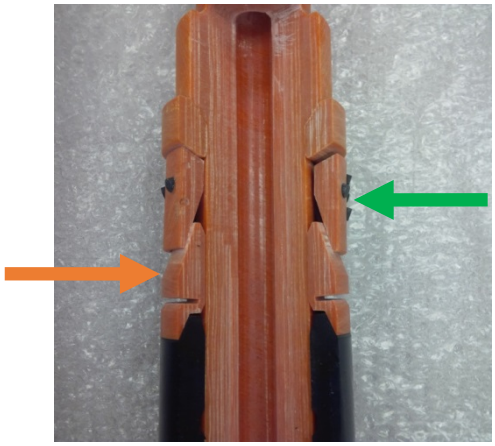
One-piece composite slip with grooves



Composite slip (green arrow) proximate to proximate end (blue arrow)

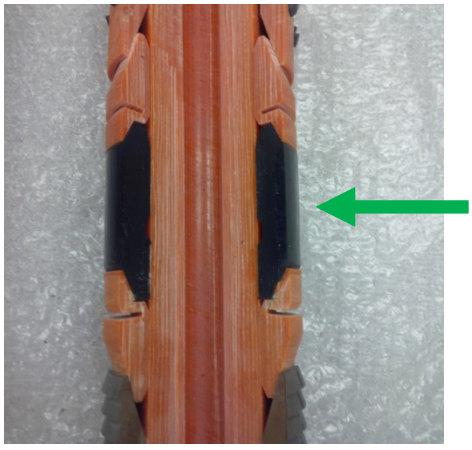


Defined groove with depth



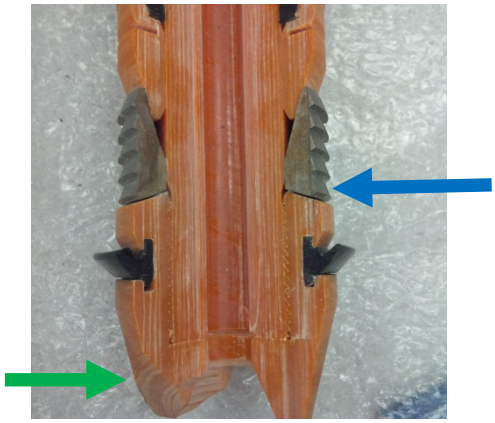
First cone (orange arrow) proximate composite slip (green arrow)

60. A sealing element is disposed around the mandrel.



Sealing element

61. The lower sleeve, is coupled to the distal end of the mandrel. The lower sleeve is proximate to a second side of the first slip.



Lower sleeve (green arrow) proximate to second side of the first slip (blue arrow)

Second Generation Cyclops Frac Plug

62. The Second Generation Cyclops Frac Plug includes a composite mandrel.

63. The composite mandrel in the Second Generation Cyclops Frac Plug has distal and proximate ends, with a first outer diameter and a second outer diameter, at the distal and proximate ends respectively. On information and belief, the Second Generation Cyclops Frac Plug includes the proximate end with an angled linear transition and the second outer diameter being larger than the first outer diameter.

Distal end of mandrel

Proximate end of mandrel

64. The Second Generation Cyclops Frac Plug includes a bearing plate. On information and belief, the Second Generation Cyclops Frac Plug includes an angled inner plate surface that is configured to engage with the mandrel.

Bearing plate

65. The first slip is disposed around the mandrel and proximate to the distal end.

First Slip

66. The Second Generation Cyclops Frac Plug has a composite slip disposed around the mandrel, which is proximate to the proximate end of the mandrel. The composite slip is a one-piece design with a plurality of grooves forming a lateral opening in the slip, defining first and second portions of slip material at both slip ends, and a depth between the outer and inner slip surface. A first cone piece is disposed proximate to the composite slip.

One-piece composite slip with grooves

First cone (blue arrow) proximate to composite slip (green arrow)

Defined groove with depth

67. A sealing element is disposed around the mandrel.

Sealing element

68. The lower sleeve is coupled to the distal end of the mandrel. The lower sleeve is proximate to a second side of the first slip.

Lower sleeve (blue arrow) proximate to a second side of the first slip (green arrow)

69. Defendants, at the very least, have had notice and knowledge of the ’416 patent, and their infringing conduct and products from the filing and receipt of this Complaint.

70. As such, upon information and belief, Defendants’ affirmative acts of making, using, selling, offering for sale, or importing the Infringing Frac Plugs have induced and continued to induce the direct infringement of the ’320 patent under 35 U.S.C. § 271(b) by a number of direct infringers, including, but not limited to, Defendants’ customers, users, distributors, affiliates, employees, and service providers. This would include the three entities listed in Maverick’s PowerPoint presentation regarding recent drill runs in Midland, Texas. *See* **Exhibit A** (Maverick Cyclops PowerPoint Presentation). Defendants performed the inducing acts with knowledge of the ’320 patent and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

71. Upon information and belief, Defendants’ have contributed to and continue to contribute to the infringement of the ’320 patent under 35 U.S.C. § 271(b) by making, using, selling, offering for sale, or importing the Infringing Frac Plugs with knowledge that the Infringing Frac Plugs were and are especially manufactured or adapted for use in infringing the ’320 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing uses. Defendants performed the contributing acts with knowledge of the ’320 patent

and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

72. Based on Defendants' knowledge of the patent and their infringing conduct, Defendants are aware that they do not have a license to practice the claims of the '320 patent. Defendants are aware that, by continuing to improperly use DHT's technology without a license, their conduct constitutes infringement of the '320 patent. As such, Defendants' continued infringement is and has been willful and deliberate.

73. Defendants' past and continuing infringement of the '320 patent has caused harm to DHT and DHT is entitled to recover damages from Defendants, in an amount not less than a reasonable royalty. In addition, such damages should be enhanced under 35 U.S.C. § 284 based on Defendants' willful conduct.

74. Defendants should also be permanently enjoined from practicing the claims in the '320 patent. On information and belief, Defendants are direct competitors to DHT and the Infringing Frac Plugs compete directly with DHT's Boss Hog Frac Plug for oil and gas hydraulic fracturing operations throughout the United States. Defendants' infringement and conduct has and likely will cause irreparable harm to DHT requiring a permanent injunction, including, but not limited to, loss in value of DHT's patented technology, lost market share, price erosion, harm to DHT's reputation and business goodwill in the fracking industry, and lost market opportunities and business relationships.

COUNT III: DEFENDANTS' INFRINGEMENT OF U.S. PATENT NO. 9,976,382

75. The above paragraphs 1 - 26 are incorporated by reference as if fully restated herein.

76. On May 22, 2018, United States Patent No. 9,976,382 (the "'382 patent") was duly and legally issued for an invention titled "Downhole Tool and Method of Use." A true and correct copy of the '382 patent is attached hereto as Exhibit **E** ('382 patent). DHT is the owner by assignment of the entire right, title, and interest in and to the '382 patent, including the sole right to enforce the '382 patent. At all times relevant to this Complaint, DHT has complied with all applicable patent marking requirements.

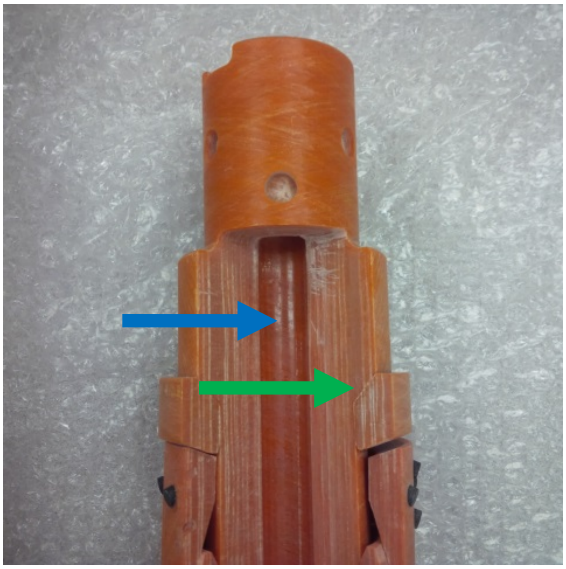
77. On information and belief, Defendants have directly infringed—literally or under the doctrine of equivalents—at least claim 1 of the '382 patent by making, using, selling, offering to sell, or importing into the United States downhole wellbore frac plugs covered by the asserted claims in violation of 35 U.S.C. § 271(a), including but not limited to the Infringing Frac Plugs. Claim 1 is provided below:

> A downhole tool useable for isolating sections of a wellbore, the downhole tool comprising:
>
> > A mandrel made of composite material, the mandrel further comprising: a proximate end having a first outer diameter; a distal end having a second outer diameter; an external side having an angled linear transition surface; and a flowbore extending from the proximate end to the distal end; a metal slip disposed about the composite mandrel, the metal slip comprising: a circular metal slip body; an outer surface comprising columns of serrated teeth; and an inner surface configured for receiving the mandrel, a seal element; a composite slip disposed about the mandrel, the composite slip farther comprising a circular composite slip body having one-piece configuration with at least partial connectivity around the entire circular composite slip body, and an at least two slip grooves disposed therein, wherein the composite slip body farther comprises a composite slip outer surface and a composite slip inner surface, wherein at least one of the at least two slip grooves forms a lateral opening in the composite slip body that is defined by a first portion of slip material at a first slip end, a second portion of slip material at a second slip end, and a depth that extends from the composite slip outer surface to the composite slip inner surface; a first cone disposed around the mandrel, and proximately between an underside of the composite slip and an end of the seal element; and a lower sleeve disposed around the mandrel and proximate an end of the metal slip.

First Generation Cyclops Frac Plug

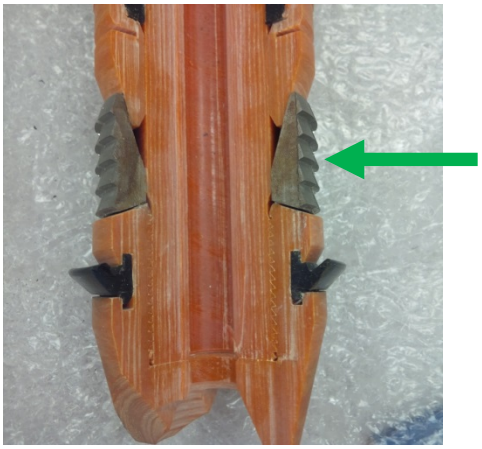
78. The First Generation Cyclops Frac Plug includes a composite mandrel.

79. The composite mandrel in the First Generation Cyclops Frac Plug has a distal end and proximate end, with outer diameters at the distal and proximate ends. The external side of the proximate end of the mandrel has an angled linear transition surface. The mandrel further includes a flowbore extending from the proximate end to the distal end.



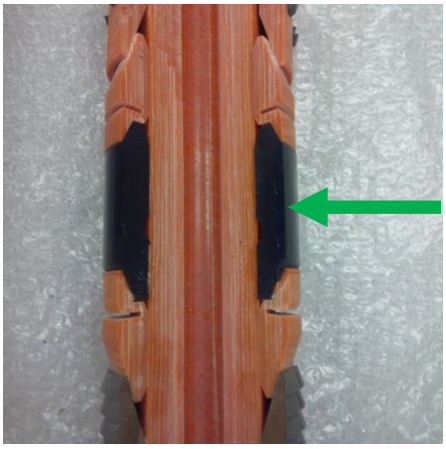
Angled linear surface (green arrow) and flowbore (blue arrow)

80. A metal slip is disposed around the mandrel of the First Generation Cyclops Frac Plugs and proximate to the distal end, with the metal slip comprising a circular metal body, an outer surface of columns of serrated teeth, and an inner surface configured for receiving the mandrel.



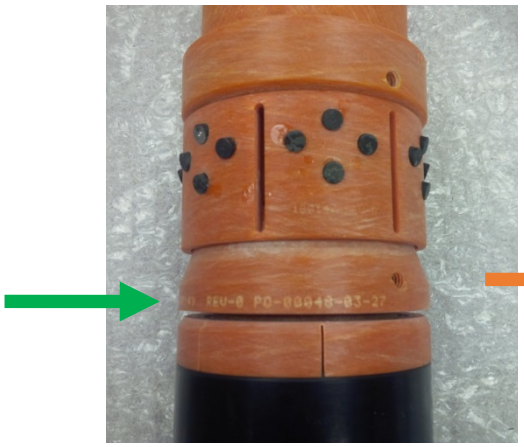
Metal slip with serrated teeth and mandrel

81. The First Generation Cyclops Frac Plug includes a seal element.

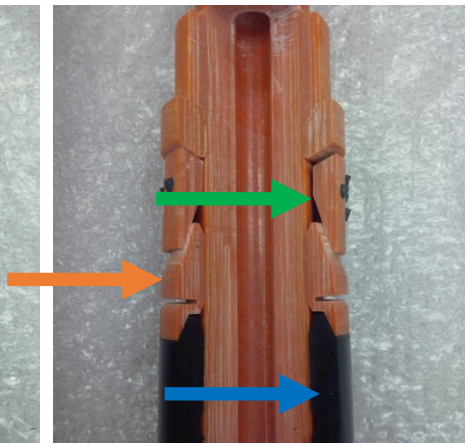


Seal element

82. The First Generation Cyclops Frac Plug has a circular composite slip disposed around the mandrel. The composite slip is a one-piece design and is at least partially connected around the entire slip. The composite slip has a plurality of grooves forming a lateral opening in the slip, defining first and second portions of slip material at both slip ends, and a depth between the outer and inner slip surface. A first cone having a completely smooth circumferential conical surface is engaged with the underside of the composite slip, and is disposed around the mandrel between the composite slip and a seal element.



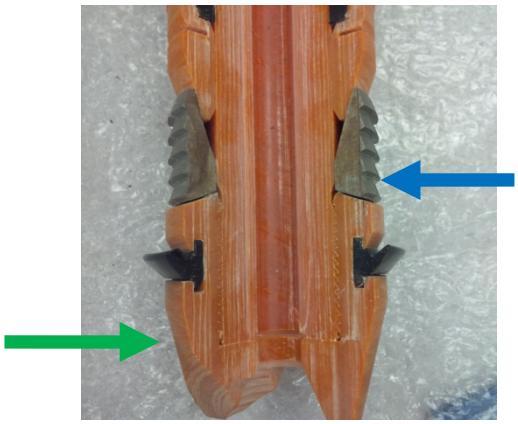
One-piece composite slip with grooves



First cone (orange arrow) proximate to the composite slip (green arrow) and between the composite slip and seal element (blue arrow)

Defined groove with depth

83. A lower sleeve is disposed around the mandrel and proximate to the metal slip.



Lower sleeve (green arrow) proximate metal slip (blue arrow)

Second Generation Cyclops Frac Plug

84. The Second Generation Cyclops Frac Plug includes a composite mandrel.

85. The composite mandrel in the Second Generation Cyclops Frac Plug has a distal end and a proximate end, with outer diameters at the distal and proximate ends. On information and belief, the Second Generation Cyclops Frac Plug includes the proximate end with an angled linear transition. The mandrel further includes a flowbore extending from the proximate end to the distal end.

Flowbore (blue arrow), proximate end (green arrow), distal end (orange arrow)

86. A metal slip is disposed around the mandrel of the Second Generation Cyclops Frac Plug and proximate to the distal end, with the metal slip comprising a circular metal body, an outer surface of columns of serrated teeth, and an inner surface configured for receiving the mandrel.

Metal slip with serrated teeth (blue arrow) proximate to the distal end (orange arrow)

87. The Second Generation Cyclops Frac Plug includes a seal element.

Seal element

88. The Second Generation Cyclops Frac Plug has a circular composite slip disposed around the mandrel. The composite slip is a one-piece design and is at least partially connected around the entire slip. The composite slip has at least two slip grooves. At least one of the slip grooves forms a lateral opening in the slip, defining first and second portions of slip material at both slip ends, and a depth between the outer and inner slip surface. A first cone having a completely smooth circumferential conical surface is engaged with the underside of the composite slip, and is disposed around the mandrel between the composite slip and a seal element.

One-piece composite slip with grooves

First cone (blue arrow) proximate to composite slip (green arrow)

Defined groove with depth

89. A lower sleeve is disposed around the mandrel and proximate to the metal slip.

Lower sleeve

90. Defendants, at the very least, have had notice and knowledge of the ’416 patent, and their infringing conduct and products from the filing and receipt of this Complaint.

91. As such, upon information and belief, Defendants’ affirmative acts of making, using, selling, offering for sale, or importing the Infringing Frac Plugs have induced and continued to induce the direct infringement of the ’382 patent under 35 U.S.C. § 271(b) by a number of direct infringers, including, but not limited to, Defendants’ customers, users, distributors, affiliates, employees, and service providers. This would include the three entities listed in Maverick’s PowerPoint presentation regarding recent drill runs in Midland, Texas. *See* **Exhibit A** (Maverick Cyclops PowerPoint Presentation). Defendants performed the inducing acts with knowledge of the ’382 patent and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

92. Upon information and belief, Defendants have contributed to and continue to contribute to the infringement of the ’382 patent under 35 U.S.C. § 271(b) by making, using, selling, offering for sale, or importing the Infringing Frac Plugs with knowledge that the Infringing Frac Plugs were and are especially manufactured or adapted for use in infringing the ’382 patent and are not a staple article or commodity of commerce suitable for substantial non-infringing uses. Defendants performed the contributing acts with knowledge of the ’382 patent and with the intent, knowledge, or willful blindness to the probability that the induced acts would constitute infringement.

93. Based on Defendants’ knowledge of the ‘382 patent and their infringing conduct, Defendants are aware that they do not have a license to practice the claims of the ’382 patent. Defendants are aware that, by continuing to improperly use DHT’s technology without a license, their conduct constitutes infringement of the ’382 patent. As such, Defendants’ continued infringement is and has been willful and deliberate.

94. Defendants’ past and continuing infringement of the ’382 patent has caused harm to DHT and DHT is entitled to recover damages from Defendants, in an amount not less than a reasonable royalty. In addition, such damages should be enhanced under 35 U.S.C. § 284 based on Defendants’ willful conduct.

95. Defendants should also be permanently enjoined from practicing the claims in the ’382 patent. On information and belief, Defendants are direct competitors of DHT and the Infringing Frac Plugs compete directly with DHT’s Boss Hog Frac Plug for oil and gas hydraulic fracturing operations throughout the United States. Defendants’ infringement and conduct has and likely will cause irreparable harm to DHT requiring a permanent injunction, including, but not limited to, loss in value of DHT’s patented technology, lost market share, price erosion, harm

to DHT's reputation and business goodwill in the fracking industry, and lost market opportunities and business relationships.

PRAYER FOR RELIEF

WHEREFORE, DHT prays for judgment and seeks relief against Defendants as follows:

(a) Judgment that Defendants have infringed the '416 patent;

(b) Judgment that Defendants have infringed the '320 patent;

(c) Judgment that Defendants have infringed the '382 patent;

(d) Judgment that Defendants' infringement of the '416 patent is and has been willful;

(e) Judgment that Defendants' infringement of the '320 patent is and has been willful;

(f) Judgment that Defendants' infringement of the '382 patent is and has been willful;

(g) For an accounting of all damages sustained by DHT because of Defendants' infringement, not less than a reasonable royalty under 35 U.S.C. § 284;

(h) For enhanced damages under 35 U.S.C. § 284 based on Defendants' willful infringement;

(i) For a permanent injunction against Defendants' continuing infringement of the '416 patent, or, in the alternative, an ongoing royalty for future infringement;

(j) For a permanent injunction against Defendants' continuing infringement of the '320 patent, or, in the alternative, an ongoing royalty for future infringement;

(k) For a permanent injunction against Defendants' continuing infringement of the '382 patent, or, in the alternative, an ongoing royalty for future infringement;

(l) For an award of attorneys' fees and costs under 35 U.S.C. § 285, or as otherwise permitted by law;

(m) For all damages together with pre-judgment and post-judgment interest; and

(n) For all other and further relief as the Court may deem just and proper.

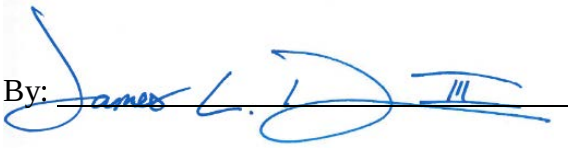
DEMAND FOR JURY TRIAL

Plaintiff DHT demands a trial by jury for all issues so triable under FED. R. CIV. P. 38(b).

Dated: February 26, 2019

Respectfully submitted,

EVERSHEDS SUTHERLAND (US) LLP

By: 

David A. Baay
James L. Duncan
1001 Fannin Street, Suite 3700
Houston, TX 77002-6760
Phone: 713-470-6112
Fax: 713-654-1301
Email: davidbaay@eversheds-sutherland.com
Email: jamesduncan@eversheds-sutherland.com

Ann G. Fort (*pro hac vice* application forthcoming)
999 Peachtree St. NE, Suite 2300
Atlanta, GA 30309
Phone: 404-853-8000
Email: annfort@eversheds-sutherland.com

Cameron C. Murphy (*pro hac vice* application forthcoming)
999 Peachtree St. NE, Suite 2300
Atlanta, GA 30309
Phone: 404-407-5078
Email: cameronmurphy@eversheds-sutherland.us

Attorneys for Plaintiff Downhole Technology LLC