

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF OKLAHOMA**

**FLEX-CHEM HOLDING
COMPANY, LLC,**

Plaintiff,

VS.

Case No. CIV-23-316-JD

**PHARAOH ENERGY SERVICES,
LLC**

Defendant.

**DEFENDANT PHARAOH ENERGY SERVICES, LLC'S
ANSWER, AFFIRMATIVE DEFENSES, AND
COUNTERCLAIMS TO FIRST AMENDED COMPLAINT**

Defendant Pharaoh Energy Services, LLC (“Pharaoh” or “Defendant”), for its Answer, Affirmative Defenses, and Counterclaims to Plaintiff Flex-Chem Holding Company, LLC’s (“Flex-Chem” or “Plaintiff”) First Amended Complaint, states as follows:

The Parties

1. Plaintiff Flex-Chem Holding Company, LLC is a limited liability company organized and existing under the laws of Oklahoma with a principal place of business at 700 North Wilson Road, Weatherford, Oklahoma 73096. Flex-Chem Holding Company, LLC is the owner of U.S. Patent Nos. 9,944,843; 10,633,575; 11,802,234; and 10,697,282 (hereinafter, “the Asserted Patents”).

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 1 of Plaintiff's Amended Complaint and therefore denies the same.

2. Plaintiff Flex-Chem Services Corporation is a corporation organized and existing under the laws of Oklahoma with a principal place of business at 700 North Wilson Road, Weatherford, Oklahoma 73096. Flex-Chem Services Corporation is the exclusive licensee of the Asserted Patents.

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 2 of Plaintiff's Amended Complaint and therefore denies the same.

3. Plaintiffs Flex-Chem Holding Company, LLC and Flex-Chem Services Corporation ("collectively, "Flex-Chem" or "Plaintiffs") are companies involved in chemical solutions for the oil and gas industry, including well stimulation and remediation solutions that increase hydrocarbon production.

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 3 of Plaintiff's Amended Complaint and therefore denies the same.

4. Defendant Pharaoh is a limited liability company organized and existing under the laws of Oklahoma and is a resident of Oklahoma, having a principal place of business in this district at 116 First Street, Velma, OK 73491. Pharaoh is an oil and gas service company that provides well-site services.

ANSWER: Pharaoh admits that it is a limited liability company organized and existing under the laws of Oklahoma and is an oil and gas service company that provides well-site services. By way of further allegation, Pharaoh's principal place of business is located at 1407 Old Highway 7, Velma, Oklahoma 73491.

Jurisdiction

5. This is an action for patent infringement arising under the Acts of Congress relating to patents, 35 U.S.C. §§ 271; 281-285.

ANSWER: Pharaoh admits that Plaintiff has brought an action under the patent laws of the United States. Pharaoh, however, denies that it has infringed any patent.

6. This Court has subject matter jurisdiction over Defendant pursuant to 28 U.S.C. §§ 1331 and 1338(a).

ANSWER: Pharaoh admits that Plaintiff has brought an action under the patent laws of the United States and thus jurisdiction is proper under 28 U.S.C. §§ 1331 and 1338 as to Plaintiff's claim for patent infringement against Pharaoh.

7. This Court has personal jurisdiction over Pharaoh because Pharaoh was formed in Oklahoma and has a principal place of business in this district. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391 and 1400(b) because Pharaoh is a resident of this district, has committed acts of infringement in this district, and has a regular and established place of business in this district.

ANSWER: Pharaoh admits that it is situated and resides within the State of Oklahoma and the Western District of Oklahoma and is subject to personal jurisdiction in this District. Pharaoh further admits that venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b) and 1400(b). Pharaoh, however, denies that it has committed any acts of patent infringement in this, or any, District.

Factual Background

8. Flex-Chem is a technology development leader in the oil and gas industry. Flex-Chem's extensive research and development efforts directed toward improving well production and operations have resulted in several new chemical treatments and technologies that are proven to improve well performance. For example, Flex-Chem's patented well remediation and stimulation methods are proven to be extremely effective at removing down-hole polymer sludge and increasing the production of fractured wells. With the onset of large-scale oil and gas production from shale formations, Flex-Chem recognized a need for new technology to improve productivity of shale wells and has invested heavily in the development, testing, and protection of Flex-Chem's patented processes for

remediation and stimulation of wells, including its OptaSTIM and OptaSTIM-E technologies.

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 8 of Plaintiff's Amended Complaint and therefore denies the same.

9. Andrew Bryce Conway, as the Technical Director of Flex-Chem, invented a method for stimulation of wells in nano-darcy shale formations and obtained United States Patent No. 9,944,843 (the "'843 patent"). Mr. Conway assigned the '843 patent to Flex-Chem Holding Company, LLC, the current owner thereof. A copy of the '843 patent is attached hereto as **Exhibit 1**. The application that led to the '843 patent was filed on April 14, 2015, and issued on April 17, 2018. It was granted an additional 252 days of term. All required maintenance fees have been paid. The '843 patent is valid and enforceable. Flex-Chem Services Corporation is now and has been the exclusive licensee of '843 patent.

ANSWER: Pharaoh admits that the '843 patent appears on its face to support that the non-provisional patent application that led to the '843 patent was filed on April 14, 2015; that the '843 patent issued on April 17, 2018; and that Andrew Bryce Conway assigned any rights in the '843 patent to Plaintiff. Pharaoh admits that the online records of the United States Patent Office appear to indicate that all required maintenance fees of the '843 patent have been paid. Pharaoh denies, however, that the claimed invention of the '843 patent is novel or non-obvious in view of the prior art. Pharaoh further denies that the '843 patent is valid and enforceable.

10. Flex-Chem filed a continuation application related to the '843 patent and obtained United States Patent No. 10,633,575 (the "'575 patent"). Mr. Conway assigned the '575 patent to Flex-Chem Holding Company, LLC, the current owner thereof. A copy of the '575 patent is attached hereto as **Exhibit 2**. The application that led to the '575 patent was filed on January 19, 2018, and issued on April 28, 2020. It was granted an additional 133 days of term. The '575 patent is valid and enforceable. Flex-Chem Services Corporation is now and has been the exclusive licensee of '575 patent.

ANSWER: Pharaoh admits that the '575 patent appears on its face to support that the non-provisional continuation patent application that led to the '575 patent was filed on January 19, 2018; that the '575 patent issued on April 28, 2020; and that Andrew Bryce Conway assigned any rights in the '575 patent to Plaintiff. Pharaoh admits that the online records of the United States Patent Office appear to indicate that the '575 patent was granted 133 days of patent Term Adjustment. Pharaoh denies, however, that the claimed invention of the '575 patent is novel or non-obvious in view of the prior art. Pharaoh further denies that the '575 patent is valid and enforceable.

11. Flex-Chem filed a continuation application related to the '843 patent and the '575 patent and obtained United States Patent No. 11,802,234 (the "'234 patent"). Mr. Conway assigned the '234 patent to Flex-Chem Holding Company, LLC, the current owner thereof. A copy of the '234 patent is attached hereto as **Exhibit 3**. The application that led to the '234 patent was filed on November 15, 2021, and issued on October 31, 2023. It was granted an additional 59 days of term. The '234 patent is valid and enforceable. Flex-Chem Services Corporation is now and has been the exclusive licensee of the '234 patent.

ANSWER: Pharaoh admits that the '234 patent appears on its face to support that the non-provisional continuation patent application that led to the '234 patent was filed on November 15, 2021; that the '234 patent issued on October 31, 2023; and that Andrew Bryce Conway assigned any rights in the '234 patent to Plaintiff. Pharaoh admits that the online records of the United States Patent Office appear to indicate that the '234 patent was granted 59 days of patent Term Adjustment. Pharaoh denies, however, that the claimed invention of the '234 patent is novel or non-obvious in view of the prior art. Pharaoh further denies that the '234 patent is valid and enforceable.

12. Mr. Conway and Robert Easterly, an employee of Cimarex Energy Co.

(“Cimarex”), after considerable research, testing, and development, invented a unique method for remediating subterranean-formed, metal-polymer complexes in wells and obtained United States Patent No. 10,202,834 (the “’834 patent”). Mr. Conway assigned the ’834 patent to Flex-Chem Holding Company, LLC, and Mr. Easterly assigned the ’834 patent to Cimarex. Cimarex subsequently assigned its interest in the ’834 patent to Flex-Chem Holding Company, LLC, the current owner thereof.

ANSWER: Pharaoh admits that the ’834 patent appears on its face to support that Messrs. Conway and Easterly assigned any rights in the ’834 patent to Plaintiff and Cimarex Energy Co., respectively. Pharaoh admits that the online records of the United States Patent and Trademark Office appear to show that Cimarex subsequently assigned its interest in the ’834 patent to Plaintiff. Pharaoh denies, however, that the claimed invention of the ’834 patent is novel or non-obvious in view of the prior art. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the remaining allegations in Paragraph 9 of Plaintiff’s Amended Complaint and therefore denies the same.

13. Flex-Chem Holding Company, LLC and Cimarex filed a continuation application related to the ’834 patent and obtained United States Patent No. 10,697,282 (the “’282 patent”). Cimarex assigned its interest in the ’282 patent to Flex-Chem Holding Company, LLC, the current owner thereof. A copy of the ’282 patent is attached hereto as **Exhibit 4**. The application that led to the ’282 patent was filed on December 19, 2018, and issued on June 30, 2020. A Certificate of Correction for the ’282 patent was issued on November 3, 2020. The ’282 patent is valid and enforceable. Flex-Chem Services Corporation is now and has been the exclusive licensee of ’282 patent.

ANSWER: Pharaoh admits that the ’282 patent appears on its face to support that the non-provisional continuation patent application that led to the ’282 patent was filed on December 19, 2018 and that the ’282 patent issued on June 30, 2020. Pharaoh admits that the online records of the United States Patent and Trademark Office appear to indicate that Cimarex assigned its rights in the ’282 patent to Plaintiff. Pharaoh also denies that the claimed

invention of the '282 Patent is novel or non-obvious in view of the prior art. Pharaoh further denies that the '282 patent is valid and enforceable. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the remaining allegations in Paragraph 10 of Plaintiff's Amended Complaint and therefore denies the same.

14. In 2020, Flex-Chem began performing its patented well remediation and stimulation services for a customer in west-central Oklahoma and has continued to do so through present. However, that customer issued a request for bid proposals for the remediation and stimulation services in west-central Oklahoma to other well services companies, including Pharaoh.

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 14 of Plaintiff's Amended Complaint and therefore denies the same.

15. Upon information and belief, in response to its bid, Pharaoh has been hired by that customer to perform, and has performed, well treatments for remediation and stimulation of polymer damage in wells using Flex-Chem's patented processes.

ANSWER: Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the allegations in Paragraph 15 of Plaintiff's Amended Complaint and therefore denies the same.

16. On or about February 10, 2023, Flex-Chem learned that Pharaoh had jobs scheduled to treat wells using the same process as Flex-Chem. Upon information and belief, Pharaoh is providing a treatment mixture of about 10% hydrochloric acid and 5% citric acid, which falls squarely within the claims of Flex-Chem's patents; injecting the treatment mixture into the wells at a pressure less than a fracture pressure of the shale formation until at least some of the treatment mixture exits the well and contacts the shale formation; maintaining the treatment mixture in contact with the shale formation for a contact time of between about 1 minute to 100 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the shale formation; and removing the treatment mixture from the wells after the contact time, thereby removing the bound naturally-occurring metals from the shale formation and thereby improving the

hydrocarbon production of the wells relative to the hydrocarbon production immediately prior to performance of the process.

ANSWER: Pharaoh denies that it is providing a treatment mixture that “falls squarely within the claims” of any of Flex-Chem’s patents, whether asserted in this action or not. Pharaoh is also without sufficient information regarding Plaintiff’s knowledge of any work performed by Pharaoh and therefore denies that allegation in Paragraph 16 of Plaintiff’s Amended Complaint. To the extent there are remaining allegations in Paragraph 16 of Plaintiff’s Amended Complaint that require a response, Pharaoh denies the same.

17. On or about February 10, 2023, Flex-Chem put Pharaoh on notice of the ’843, ’575, and ’282 patents via a letter sent by U.S.P.S. Certified Mail. Pharaoh received the notice on February 14, 2023.

ANSWER: Pharaoh admits that it received a letter from Plaintiff on February 14, 2023. Pharaoh denies the remaining allegations in Paragraph 17 of Plaintiff’s Amended Complaint.

18. In mid to late February, 2023, Flex-Chem learned that Pharaoh had been hired to and did provide well treatments for remediation and stimulation of several wells, including those in west-central Oklahoma; contracts that, but for Pharaoh’s infringement of Flex-Chem’s patents, would have gone to Flex-Chem.

ANSWER: Pharaoh denies that it is infringing any of Flex-Chem’s patents, whether asserted in this action or not. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of the remaining allegations in Paragraph 18 of Plaintiff’s Amended Complaint and therefore denies the same.

COUNT I
Patent Infringement of U.S. Patent No. 9,944,843

19. Plaintiffs repeat and re-alleges by reference the allegations of Paragraphs 1-18 above, as if fully set forth herein.

ANSWER: Pharaoh incorporates by reference and re-alleges each and every answer to Plaintiff's allegations contained in numerical paragraphs 1 through 18 as though fully set forth herein.

20. On April 17, 2018, United States Patent No. 9,944,843 entitled Stimulation Of Wells In Nano-Darcy Shale Formations was duly and legally issued to Flex-Chem Holding Company, LLC, the patent owner. Flex-Chem Services Corporation is now and has been the exclusive licensee of '843 patent.

ANSWER: Pharaoh admits that the '843 patent appears on its face to have been issued by the United States Patent & Trademark Office on April 17, 2018. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of whether the issuance of the '843 patent was "duly and legally" performed as well as to any of the remaining allegations in Paragraph 20 of Plaintiff's Amended Complaint and therefore denies the same.

21. Defendant has infringed and continues to infringe literally and/or under the doctrine of equivalents at least independent claim 1 of the '843 patent by making, using, offering for sale, and/or selling well stimulation and remediation services for at least the wells in west-central Oklahoma, including at least in the STACK Area.

ANSWER: Pharaoh denies the allegations in Paragraph 21 of Plaintiff's Amended Complaint.

22. For example, Defendant directly infringed by performing or causing the performance of the method steps of at least claim 1 of the '843 patent in the United States:

A method for stimulating an existing well in a nano-darcy shale formation comprising:

22.1: providing a treatment mixture containing between about 0.1% and 95% by weight metal complexing agent at a pH of between about 0 and 10

Upon information and belief, based on the facts above, Defendant provided a treatment mixture containing about 5% citric acid metal complexing agent at a pH of about 0 to 10.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '843 patent and therefore denies the allegations in Paragraph 22.1 of Plaintiff's Amended Complaint.

22.2: injecting the treatment mixture into the well at a pressure less than a fracture pressure of the nano-darcy shale formation until at least some of the treatment mixture exits the well and contacts the nano-darcy shale formation

Upon information and belief, based on the facts above, Defendant injected its treatment mixture into the well at a pressure less than a fracture pressure of the nano-darcy shale formation until at least some of its treatment mixture exited the well and contacted the nano-darcy shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '843 patent and therefore denies the allegations in Paragraph 22.2 of Plaintiff's Amended Complaint.

22.3: maintaining the treatment mixture in contact with the nano-darcy shale formation for a contact time of between about 1 minute to 100 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the nano-darcy shale formation

Upon information and belief, based on the facts above, Defendant maintained its treatment mixture in contact with the nano-darcy shale formation for a contact time of between about 1 minute to 100 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the nano-darcy shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '843 patent and therefore denies the allegations in Paragraph 22.3 of Plaintiff's Amended Complaint.

22.4: removing the treatment mixture from the well after the contact time, thereby removing the bound naturally-occurring metals from the nano-darcy shale formation and thereby improving the hydrocarbon production of the well relative to the hydrocarbon production immediately prior to performance of the method

Upon information and belief, based on the facts above, Defendant removed its treatment mixture from the well after the contact time, thereby removing the bound naturally-occurring metals from the nano-darcy shale formation and thereby improving the hydrocarbon production of the well relative to the hydrocarbon production immediately prior to performance of the method.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '843 patent and therefore denies the allegations in Paragraph 22.4 of Plaintiff's Amended Complaint.

23. Defendant has had actual knowledge of the '843 patent since at least as early as February 14, 2023, when Casey Hays of Pharaoh received a letter from Flex-Chem attaching this patent.

ANSWER: Pharaoh admits that it received a letter from Plaintiff on February 14, 2023. Pharaoh denies the remaining allegations in Paragraph 23 of Plaintiff's Amended Complaint.

24. Upon information and belief, Defendant continues to offer its well remediation and stimulation services that utilize Flex-Chem's patented processes.

ANSWER: Pharaoh denies the allegations in Paragraph 24 of Plaintiff's Amended Complaint.

25. Defendant has willfully infringed and continues to willfully infringe the '843

patent.

ANSWER: Pharaoh denies the allegations in Paragraph 25 of Plaintiff's Amended Complaint.

26. Flex-Chem has been damaged by Defendant's infringement of the '843 patent and will continue to be damaged in the future unless Defendant is permanently enjoined from infringing the '843 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 26 of Plaintiff's Amended Complaint.

COUNT II
Patent Infringement of U.S. Patent No. 10,633,575

27. Plaintiffs repeat and re-alleges by reference the allegations of Paragraphs 1-26 above, as if fully set forth herein.

ANSWER: Pharaoh incorporates by reference and re-alleges each and every answer to Plaintiff's allegations contained in numerical paragraphs 1 through 26 as though fully set forth herein.

28. On April 28, 2020, United States Patent No. 10,633,575 entitled Stimulation of Wells in Nano-Darcy Shale Formations was duly and legally issued to Flex-Chem Holding Company, LLC, the patent owner. Flex-Chem Services Corporation is now and has been the exclusive licensee of '575 patent.

ANSWER: Pharaoh admits that the '575 patent appears on its face to have been issued by the United States Patent & Trademark Office on April 20, 2020. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of whether the issuance of the '843 patent was "duly and legally" performed as well as to any of the remaining allegations in Paragraph 28 of Plaintiff's Amended Complaint and therefore denies

the same.

29. Defendant has infringed and continues to infringe literally and/or under the doctrine of equivalents at least independent claim 1 of the '575 patent by making, using, offering for sale, and/or selling well stimulation and remediation services for at least the wells in west-central Oklahoma, including at least in the STACK Area.

ANSWER: Pharaoh denies the allegations in Paragraph 29 of Plaintiff's Amended Complaint.

30. For example, Defendant directly infringed by performing or causing the performance of the method steps of at least claim 1 of the '575 patent in the United States:

A method for stimulating a well in a shale formation comprising:

30.1: providing a treatment mixture containing between about 0.1% and 95% by weight metal complexing agent at a pH of between about 0 and 10

Upon information and belief, based on the facts above, Defendant provided a treatment mixture containing about 5% citric acid metal complexing agent at a pH of about 0 to 10.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '575 patent and therefore denies the allegations in Paragraph 30.1 of Plaintiff's Amended Complaint.

30.2: injecting the treatment mixture into the well until at least some of the treatment mixture contacts the shale formation

Upon information and belief, based on the facts above, Defendant injected its treatment mixture into the well until at least some of the treatment mixture contacted the shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '575 patent and therefore denies the allegations in Paragraph 30.2 of Plaintiff's Amended Complaint.

30.3: maintaining the treatment mixture in contact with the shale formation for a contact time of between about 1 minute to 100 days, most likely less than 30 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the shale formation

Upon information and belief, based on the facts above, Defendant maintained its treatment mixture in contact with the shale formation for a contact time of between about 1 minute to 100 days thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '575 patent and therefore denies the allegations in Paragraph 30.3 of Plaintiff's Amended Complaint.

30.4: removing the treatment mixture from the well after the contact time, thereby removing the bound naturally-occurring metals from the shale formation and thereby improving hydrocarbon production of the well relative to hydrocarbon production immediately prior to stimulating the well

Upon information and belief, based on the facts above, Defendant removed its treatment mixture from the well after the contact time, thereby removing the bound naturally- occurring metals from the shale formation and thereby improving hydrocarbon production of the well relative to hydrocarbon production immediately prior to stimulating the well.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '575 patent and therefore denies the allegations in Paragraph 30.4 of Plaintiff's Amended Complaint.

31. Defendant has had actual knowledge of the '575 patent since at least as early as February 14, 2023, when Mr. Hays of Pharaoh received a letter from Flex-Chem attaching this patent.

ANSWER: Pharaoh admits that it received a letter from Plaintiff on February 14, 2023. Pharaoh denies the remaining allegations in Paragraph 31 of Plaintiff's Amended

Complaint.

32. Upon information and belief, Defendant continues to offer its well remediation and stimulation services that utilize Flex-Chem's patented processes.

ANSWER: Pharaoh denies the allegations in Paragraph 32 of Plaintiff's Amended Complaint.

33. Defendant has willfully infringed and continues to willfully infringe the '575 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 33 of Plaintiff's Amended Complaint.

34. Flex-Chem has been damaged by Defendant's infringement of the '575 patent and will continue to be damaged in the future unless Defendant is permanently enjoined from infringing the '575 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 34 of Plaintiff's Amended Complaint.

COUNT III
Patent Infringement of U.S. Patent No. 11,802,234

35. Plaintiffs repeat and re-alleges by reference the allegations of Paragraphs 1-34 above, as if fully set forth herein.

ANSWER: Pharaoh incorporates by reference and re-alleges each and every answer to Plaintiff's allegations contained in numerical paragraphs 1 through 34 as though fully set forth herein.

36. On October 31, 2023, United States Patent No. 11,802,234 entitled Stimulation Of Wells In Nano-Darcy Shale Formations was duly and legally issued to Flex-Chem Holding Company, LLC, the patent owner. Flex-Chem Services Corporation is now and has been the exclusive licensee of '234 patent.

ANSWER: Pharaoh admits that the '234 patent appears on its face to have been issued by the United States Patent & Trademark Office on October 31, 2023. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of whether the issuance of the '234 patent was “duly and legally” performed as well as to any of the remaining allegations in Paragraph 36 of Plaintiff’s Amended Complaint and therefore denies the same.

37. Defendant has infringed and continues to infringe literally and/or under the doctrine of equivalents at least independent claim 24 of the '234 patent by making, using, offering for sale, and/or selling well stimulation and remediation services for at least the wells in west-central Oklahoma, including at least in the STACK Area.

ANSWER: Pharaoh denies the allegations in Paragraph 37 of Plaintiff’s Amended Complaint.

38. For example, Defendant directly infringed by performing or causing the performance of the method steps of at least claim 24 of the '234 patent in the United States:

A method for stimulating a well in a shale formation comprising:

38.1: providing a treatment mixture containing between about 1% and 40% by weight metal complexing agent and between about 0.1 and 30% by weight of acid as pH modifier, wherein the metal complexing agent comprises citric acid, acetic acid, formic acid, or a mixture thereof and the pH modifier comprises hydrochloric acid, hydrofluoric acid, or a mixture thereof

Upon information and belief, based on the facts above, Defendant provided a treatment mixture containing about 5% citric acid and about 10% by weight of hydrochloric acid as pH modifier.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '234 patent and therefore denies the allegations in Paragraph 38.1 of Plaintiff’s Amended Complaint.

38.2: injecting the treatment mixture into the well until at least some of the treatment mixture contacts the shale formation

Upon information and belief, based on the facts above, Defendant injected its treatment mixture into the well until at least some of the treatment mixture contacted the shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '234 patent and therefore denies the allegations in Paragraph 38.2 of Plaintiff's Amended Complaint.

38.3: maintaining the treatment mixture in contact with the shale formation for a contact time of between about 1 minute to 100 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the shale formation

Upon information and belief, based on the facts above, Defendant maintained its treatment mixture in contact with the shale formation for a contact time of between about 1 minute to 100 days, thereby allowing the metal complexing agent to bind with at least some naturally-occurring metals contained within the shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '234 patent and therefore denies the allegations in Paragraph 38.3 of Plaintiff's Amended Complaint.

38.4: removing the bound naturally-occurring metals from the shale formation

Upon information and belief, based on the facts above, Defendant's well stimulation results in the removal of the bound naturally-occurring metals from the shale formation.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '234 patent and therefore denies the allegations in Paragraph 38.4 of Plaintiff's Amended Complaint.

39. Defendant has had actual knowledge of the '234 patent since at least as early as November 14, 2023, when undersigned counsel for Flex-Chem sent undersigned counsel for Pharaoh a copy of this patent.

ANSWER: Pharaoh admits that its counsel received a copy of the '234 patent from Flex-Chem's counsel on November 14, 2023. Pharaoh denies the remaining allegations in Paragraph 39 of Plaintiff's Amended Complaint.

40. Upon information and belief, Defendant continues to offer its well remediation and stimulation services that utilize Flex-Chem's patented processes.

ANSWER: Pharaoh denies the allegations in Paragraph 40 of Plaintiff's Amended Complaint.

41. Defendant has willfully infringed and continues to willfully infringe the '234 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 41 of Plaintiff's Amended Complaint.

42. Flex-Chem has been damaged by Defendant's infringement of the '234 patent and will continue to be damaged in the future unless Defendant is permanently enjoined from infringing the '234 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 42 of Plaintiff's Amended Complaint.

COUNT IV
Patent Infringement of U.S. Patent No. 10,697,282

43. Plaintiffs repeat and re-alleges by reference the allegations of Paragraphs 1-42 above, as if fully set forth herein.

ANSWER: Pharaoh incorporates by reference and re-alleges each and every answer

to Plaintiff's allegations contained in numerical paragraphs 1 through 42 as though fully set forth herein.

44. On June 30, 2020, United States Patent No. 10,697,282 entitled Method for Remediation of Subterranean-Formed Metal-Polymer Complexes Using A Metal Complexing Agent was duly and legally issued to Flex-Chem Holding Company, LLC and Cimarex. Cimarex assigned its interest in the '282 patent to Flex-Chem Holding Company, LLC, the patent owner. Flex-Chem Services Corporation is now and has been the exclusive licensee of '282 patent since.

ANSWER: Pharaoh admits that the '282 patent appears on its face to have been issued by the United States Patent & Trademark Office on June 30, 2020. Pharaoh is without sufficient information or knowledge to form a belief as to the truth or falsity of whether the issuance of the '282 patent was "duly and legally" performed as well as to any of the remaining allegations in Paragraph 44 of Plaintiff's Amended Complaint and therefore denies the same.

45. Defendant has infringed and continues to infringe literally and/or under the doctrine of equivalents at least independent claim 1 of the '282 patent by making, using, offering for sale, and/or selling well stimulation and remediation services for at least the wells in west-central Oklahoma, including at least in the STACK Area.

ANSWER: Pharaoh denies the allegations in Paragraph 45 of Plaintiff's Amended Complaint.

46. For example, Defendant directly infringed by performing or causing the performance of the method steps of at least claim 1 of the '282 patent in the United States:

A method for remediating a subterranean-formed metal-polymer complex in a pre-existing well in a subterranean shale formation, the method comprising:

46.1: providing a metal-polymer complex remediation mixture comprising between 0.1% and 95% by weight metal complexing agent

Upon information and belief, based on the facts above, Defendant provided a treatment mixture containing about 5% citric acid metal complexing agent.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '282 patent and therefore denies the allegations in Paragraph 46.1 of Plaintiff's Amended Complaint.

46.2: injecting the metal-polymer complex remediation mixture into the well at a pressure less than a fracture pressure of the subterranean formation until at least some of the metal- polymer complex remediation mixture contacts the subterranean-formed metal-polymer complex, wherein the subterranean-formed metal polymer complex forms from a previously injected fracturing fluid and the metal of the subterranean-formed metal- polymer complex includes metal naturally present within the subterranean formation

Upon information and belief, based on the facts above, Defendant injected its metal-polymer complex remediation mixture into the well at a pressure less than a fracture pressure of the subterranean formation until at least some of its metal-polymer complex remediation mixture contacted the subterranean-formed metal-polymer complex, wherein the subterranean-formed metal polymer complex forms from a previously injected fracturing fluid and the metal of the subterranean-formed metal-polymer complex includes metal naturally present within the subterranean formation

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '282 patent and therefore denies the allegations in Paragraph 46.1 of Plaintiff's Amended Complaint.

46.3: maintaining the metal-polymer complex remediation mixture in contact with the subterranean-formed metal-polymer complex for a contact time of between about 1 minute and about 100 days, thereby allowing the metal complexing agent to cause the subterranean-formed metal-polymer complex to dissociate and dissolve but not precipitate the metal and thereby creating a low viscosity flow back fluid comprising the spent metal- polymer complex remediation mixture and the metal-polymer complex components

Upon information and belief, based on the facts above, Defendant maintained its metal- polymer complex remediation mixture in contact with the subterranean-

formed metal- polymer complex for a contact time of between about 1 minute and about 100 days, thereby allowing the metal complexing agent to cause the subterranean-formed metal-polymer complex to dissociate and dissolve but not precipitate the metal and thereby creating a low viscosity flow back fluid comprising the spent metal-polymer complex remediation mixture and the metal-polymer complex components

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '282 patent and therefore denies the allegations in Paragraph 46.3 of Plaintiff's Amended Complaint.

46.4: removing the low viscosity flow back fluid from the well after the contact time, thereby improving hydrocarbon production of the well

Upon information and belief, based on the facts above, Defendant removed the low viscosity flow back fluid from the well after the contact time, thereby improving hydrocarbon production of the well.

ANSWER: Pharaoh is without sufficient information as to the meaning to be afforded to claim terms of the '282 patent and therefore denies the allegations in Paragraph 46.4 of Plaintiff's Amended Complaint.

47. Defendant has had actual knowledge of the '282 patent since at least as early as February 14, 2023, when Mr. Hays of Pharaoh received a letter from Flex-Chem attaching this patent.

ANSWER: Pharaoh admits that it received a letter from Plaintiff on February 14, 2023. Pharaoh denies the remaining allegations in Paragraph 47 of Plaintiff's Amended Complaint.

48. Upon information and belief, Defendant continues to offer its well remediation and stimulation services that utilize Flex-Chem's patented processes.

ANSWER: Pharaoh denies the allegations in Paragraph 48 of Plaintiff's Amended

Complaint.

49. Defendant has willfully infringed and continues to willfully infringe the '282 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 49 of Plaintiff's Amended Complaint.

50. Flex-Chem has been damaged by Defendant's infringement of the '282 patent and will continue to be damaged in the future unless Defendant is permanently enjoined from infringing the '282 patent.

ANSWER: Pharaoh denies the allegations in Paragraph 50 of Plaintiff's Amended Complaint.

RESPONSE TO PLAINTIFF'S PRAYER FOR RELIEF

In response to Plaintiff's prayer for relief, Pharaoh denies each and every allegation contained therein and, further, Pharaoh specifically denies that Plaintiff is entitled to any of the relief requested in the Amended Complaint; specifically denies that Plaintiff is entitled to an adjudication that any of the patents-in-suit are valid and enforceable; specifically denies that Plaintiff is entitled to an adjudication that Pharaoh has infringed or is infringing, directly or indirectly, any claim of any of the patents-in-suit; specifically denies that Plaintiff has been damaged by any acts of Pharaoh in any way or that Plaintiff is entitled to any award of damages, costs, expenses, interest, or enhanced damages; specifically denies that Plaintiff is entitled to any injunctive relief; specifically denies that Plaintiff is entitled to attorney's fees or costs of suit; and specifically denies that Plaintiff is entitled to an award of pre- and post-judgment interest.

RESPONSE TO PLAINTIFF'S DEMAND FOR JURY TRIAL

Plaintiff's demand for a jury trial is not a factual allegation, and Pharaoh accordingly is not required to provide a response.

PHARAOH'S AFFIRMATIVE DEFENSES

Pharaoh alleges the following as separate and affirmative defenses to the Amended Complaint. By virtue of having listed the following defenses, Pharaoh does not assume any legal or factual burden not otherwise assigned to them under the law:

FIRST AFFIRMATIVE DEFENSE

1. Pharaoh has not engaged in any acts that would constitute direct, indirect, or joint infringement of any valid claim of the '843, '575, 234, and/or '282 patents, either literally or under the doctrine of equivalents, willfully or otherwise.

SECOND AFFIRMATIVE DEFENSE

2. Pharaoh does not make, use, sell, or offer to sell each claimed element of any asserted claim of the '843, '575, 234, and/or '282 patents, nor does Pharaoh direct or control another entity to make, use, sell, or offer to sell any element which is not made, used, sold, or offered to be sold by Pharaoh.

THIRD AFFIRMATIVE DEFENSE

3. Pharaoh had no knowledge that any product it used or uses allegedly infringes any specific claim of the '843, '575, 234, and/or '282 patents, and therefore, it could not have

induced any alleged infringement of any specific claim of the '843, '575, 234, and/or '282 patents.

FOURTH AFFIRMATIVE DEFENSE

4. All claims of the '843, '575, 234, and/or '282 patents are invalid and/or unenforceable for failure to satisfy the conditions of patentability set forth in 35 U.S.C. §§ 101 *et seq.*, including at least sections 101, 102, 103, and 112.

FIFTH AFFIRMATIVE DEFENSE

5. Plaintiff's claims are barred, in whole or in part, by the doctrines of waiver, laches, and/or estoppel.

SIXTH AFFIRMATIVE DEFENSE

6. The Amended Complaint fails to state a claim upon which relief may be granted.

SEVENTH AFFIRMATIVE DEFENSE

7. Plaintiff is barred, under the doctrine of prosecution history estoppel, from construing the claims of the '843, '575, 234, and/or '282 patents in such a way as may cover any of the products or processes used by Pharaoh by reasons of statements made to the United States Patent and Trademark Office during the prosecution of the application that led to the issuance of the '843, '575, 234, and/or '282 patents.

Pharaoh reserves the right to assert additional defenses that it learns of through

discovery in this action.

PHARAOH'S PRAYER FOR RELIEF ON PLAINTIFF'S CLAIMS

Pharaoh seeks the following relief on Plaintiff's claims:

- a. That Plaintiff take nothing by way of its Amended Complaint;
- b. That the Amended Complaint, and each of its claims for relief, be dismissed with prejudice;
- c. That Defendant be awarded their costs of suit incurred herein, including attorney's fees and expenses; and
- d. Such other relief as the Court deems just and proper.

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PHARAOH'S COUNTERCLAIMS

Pursuant to Fed. R. Civ. P. 13, Pharaoh, for its counterclaims, complains and alleges as follows against Plaintiff:

THE PARTIES

1. Defendant-Counterclaimant Pharaoh is a limited liability company organized and existing under the laws of Oklahoma and is a resident of Oklahoma, having a principal place of business in this district at 1407 Old Highway 7, Velma, Oklahoma 73491. Pharaoh is an oil and gas service company that provides well-site services.

2. Plaintiff-Counter Defendant Flex-Chem is a limited liability company organized and existing under the laws of Oklahoma with a principal place of business at 700 North Wilson Road, Weatherford, Oklahoma 73096.

JURISDICTION AND VENUE

3. This is an action arising under 35 U.S.C. § 101 *et seq.* (“the Patent Act”).

4. This Court has original, subject matter jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338.

5. This Court has personal jurisdiction over Plaintiff because it brought this action in this Court and thereby consented to its jurisdiction. Alternatively, this Court has jurisdiction over Plaintiff because, among other things, Plaintiff does business in the State of Oklahoma and maintains its principal place of business in this district.

6. Venue is proper in this district because Plaintiff brought this action in this Court and thereby consented to venue. Alternatively, venue is proper in this district pursuant to 28

U.S.C. § 1391 (b) and (c) because Plaintiff resides in this district and is subject to personal jurisdiction in this district.

CAUSES OF ACTION

COUNT I - Declaratory Judgment of Non-Infringement of the '843 Patent

7. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–6 of its Counterclaims.

8. An actual case or controversy exists between Pharaoh and Plaintiff as to whether the '843 patent is infringed by Pharaoh.

9. A judicial declaration is necessary and appropriate so that Pharaoh may ascertain its rights regarding the '843 patent.

10. Pharaoh has not infringed and does not infringe, directly or indirectly, any valid and enforceable claim of the '843 patent.

COUNT II - Declaratory Judgment of Non-Infringement of the '575 Patent

11. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–6 of its Counterclaims.

12. An actual case or controversy exists between Pharaoh and Plaintiff as to whether the '575 patent is infringed by Pharaoh.

13. A judicial declaration is necessary and appropriate so that Pharaoh may ascertain its rights regarding the '575 patent.

14. Pharaoh has not infringed and does not infringe, directly or indirectly, any valid and enforceable claim of the '575 patent.

COUNT III - Declaratory Judgment of Non-Infringement of the '282 Patent

15. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–6 of its Counterclaims.

16. An actual case or controversy exists between Pharaoh and Plaintiff as to whether the '282 patent is infringed by Pharaoh.

17. A judicial declaration is necessary and appropriate so that Pharaoh may ascertain its rights regarding the '282 patent.

18. Pharaoh has not infringed and does not infringe, directly or indirectly, any valid and enforceable claim of the '282 patent.

COUNT IV – Declaratory Judgment of Non-Infringement of the '234 Patent

19. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–18 of its Counterclaims.

20. An actual case or controversy exists between Pharaoh and Plaintiff as to whether the '234 patent is infringed by Pharaoh.

21. A judicial declaration is necessary and appropriate so that Pharaoh may ascertain its rights regarding the '234 patent.

22. Pharaoh has not infringed and does not infringe, directly or indirectly, any valid and enforceable claim of the '234 patent.

COUNT IV - Declaratory Judgment of Invalidity of the '843 Patent

23. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–22 of its Counterclaims.

24. All claims of the '843 patent are invalid under *at least* 35 U.S.C. §§ 101, 102, 103, and 112.

25. An immediate, real, and justiciable controversy exists between Pharaoh and Plaintiff regarding the validity of the '843 patent.

26. Pharaoh seeks a judgment declaring that the claims of the '843 patent are invalid.

COUNT V - Declaratory Judgment of Invalidity of the '575 Patent

27. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–26 of its Counterclaims.

28. All claims of the '575 patent are invalid under *at least* 35 U.S.C. §§ 101, 102, 103, and 112.

29. An immediate, real, and justiciable controversy exists between Pharaoh and Plaintiff regarding the validity of the '575 patent.

30. Pharaoh seeks a judgment declaring that the claims of the '575 patent are invalid.

COUNT VI - Declaratory Judgment of Invalidity of the '282 Patent

31. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–30 of its Counterclaims.

32. All claims of the '282 patent are invalid under *at least* 35 U.S.C. §§ 101, 102, 103, and 112.

33. An immediate, real, and justiciable controversy exists between Pharaoh and Plaintiff regarding the validity of the '282 patent.

34. Pharaoh seeks a judgment declaring that the claims of the '282 patent are invalid.

COUNT VII – Declaratory Judgment of Invalidity of the '234 Patent

35. Pharaoh restates and incorporates by reference its allegations in paragraphs 1–34 of its Counterclaims.

36. All claims of the '234 patent are invalid under *at least* 35 U.S.C. §§ 101, 102, 103, and 112.

37. An immediate, real, and justiciable controversy exists between Pharaoh and Plaintiff regarding the validity of the '234 patent.

38. Pharaoh seeks a judgment declaring that the claims of the '234 patent are invalid.

EXCEPTIONAL CASE

39. On information and belief, this is an exceptional case entitling Pharaoh to an award of its attorneys' fees incurred in connection with defending and prosecuting this action pursuant to 35 U.S.C. § 285, as a result of, *inter alia*, Plaintiff's assertion of the patents-in-suit against Pharaoh with the knowledge that Pharaoh does not infringe any valid or enforceable claim of the patents-in-suit and/or that the patents-in-suit are invalid and/or unenforceable.

PHARAOH'S PRAYER FOR RELIEF ON ITS COUNTERCLAIMS

Pharaoh seeks the following relief on its counterclaims:

- a. A judgment dismissing Plaintiff's Amended Complaint against Pharaoh with prejudice;
- b. A judgment declaring that Pharaoh has not infringed, contributed to the infringement of, or induced others to infringe, either directly or indirectly, any valid and enforceable claim of any of the patents-in-suit;
- c. A judgment declaring that the patents-in-suit are invalid and/or unenforceable;
- d. A judgment declaring that Pharaoh has not willfully infringed and is not willfully infringing any valid and/or enforceable claim of the patents-in-suit.
- e. A judgment declaring that this case is exceptional and an award to Pharaoh of its reasonable costs and expenses of litigation, including attorneys' fees and expert witness fees;
- f. A judgment declaring, limiting or barring Plaintiff's ability to enforce the patents-in-suit in equity; and
- g. Any other relief the Court deems appropriate.

PHARAOH'S DEMAND FOR A JURY TRIAL

Pharaoh demands a trial by jury on all issues so triable.

Dated: January 11, 2024

/s/ Evan W. Talley

Douglas J. Sorocco, OBA #17347

Evan W. Talley, OBA # 22923

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ATTORNEY FOR DEFENDANT

PHARAOH ENERGY SERVICES, LLC

CERTIFICATE OF SERVICE

I certify that on January 11, 2024, I electronically transmitted the foregoing document to the Clerk of Court using the NextGen CM/ECF system for filing. Based on the records currently on file in this case, the Clerk of Court will transmit a Notice of Electronic Filing to the following registered participants of the ECF System:

Ross N. Chaffin
Toby M. McKinstry
Anthony Zeuli
Paige Stradley
Kristen Souther

/s/ Julie Oseland

Julie Oseland