NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

ENERPOL, LLC,
Plaintiff-Appellant

v.

SCHLUMBERGER TECHNOLOGY CORPORATION,
Defendant-Cross-Appellant

2019-1079, 2019-1120

Appeals from the United States District Court for the Eastern District of Texas in No. 2:17-cv-00394-JRG, Judge J. Rodney Gilstrap.

Decided: March 31, 2020

ROBERT P. COURTNEY, Fish & Richardson P.C., Minneapolis, MN, argued for plaintiff-appellant. Also represented by MATHIAS WETZSTEIN SAMUEL; BETHANY MIHALIK, Washington, DC; LEONARD DAVIS, Dallas, TX; NITIKA GUPTA FIORELLA, Wilmington, DE.

MAXIMILIAN A. GRANT, Latham & Watkins LLP, Washington, DC, argued for defendant-cross-appellant. Also represented by GABRIEL BELL, ROBERT J. GAJARSA; GREGORY SOBOLSKI, San Francisco, CA.

Before REYNA, TARANTO, and STOLL, *Circuit Judges.*

STOLL, *Circuit Judge.*

These appeals arise from an action for patent infringement. EnerPol, LLC accused Schlumberger Technology Corporation of infringing certain claims of U.S. Patent No. 6,949,491 directed to hydraulic fracturing methods. Following claim construction proceedings, the district court entered a stipulated judgment of noninfringement in favor of Schlumberger. EnerPol challenges the district court's construction of two disputed claim terms on which the judgment is based. Schlumberger cross-appeals, requesting dismissal of EnerPol's appeal for lack of appellate jurisdiction. We conclude that we have jurisdiction over EnerPol's appeal. Because we discern no reversible error in the district court's claim constructions, we affirm the judgment of noninfringement.

BACKGROUND

I

The '491 patent relates to "[h]ydraulic fracturing of wells by injecting a degradable polymer phase as a fracturing fluid." '491 patent, Abstract. Specifically, the patent describes methods "for increasing flow rate of wells by injecting a highly viscous material, which may be a thermoplastic degradable polymer, which may contain proppant particles, into an earth formation surrounding a well." *Id.* at col. 1 ll. 12–15. "Proppant" particles, such as silica sand, can be added to the fracturing fluid such that after the fluid injection has ceased and fluid retreats back into the wellbore and out of the fracture, these particles "prop" the walls of the facture apart, thus preventing the walls from closing. *Id.* at col. 1 ll. 30–36, col. 8 ll. 59–60.

Figures 2(a)–(e) "illustrate pellets of degradable polymer with and without proppant and before and after coalescence of the pellets to form a polymer-continuous liquid phase." *Id.* at col. 4 ll. 20–22. As shown in Figure 2(c), the pellets may contain "proppant 26 dispersed in degradable polymer 24." *Id.* at col. 8 ll. 57–59. Figure 2(e) "illustrates element 29 of proppant-laden polymer-continuous liquid phase fracturing fluid, formed when polymer 24 in pellets 25 becomes the continuous or external phase and carries proppant 26 along with dispersed carrier fluid 28 into a fracture." *Id.* at col. 9 ll. 1–5.

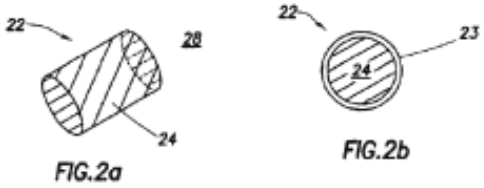

FIG.2a FIG.2b

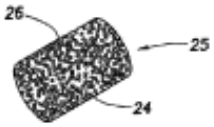

FIG.2c

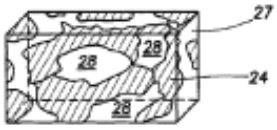

FIG.2d

FIG.2e

Id. Fig. 2.

Independent claims 1 and 24 recite the two disputed claim terms at issue in these appeals:

> 1. A well treatment method for treating a formation around a wellbore, the formation having a fracturing pressure, comprising:
>
> (a) transporting a degradable thermoplastic polymer in a solid bulk form down the wellbore;
>
> (b) displacing a *polymer-continuous liquid phase* comprising the degradable thermoplastic polymer from the wellbore into the formation at a pressure greater than the fracturing pressure of the formation.
>
> . . .
>
> 24. A method for hydraulic fracturing of a formation penetrated by a wellbore, comprising:
>
> (a) forming a slurry comprising a degradable thermoplastic polymer in a solid form in a carrier fluid and placing the slurry in the wellbore;
>
> (b) with a displacement fluid having a selected specific gravity, displacing the slurry down the wellbore to a selected location in the wellbore;
>
> (c) converting the slurry to a *continuous liquid phase* having a specific gravity and *comprising the carrier fluid dispersed in the degradable polymer* at the selected location in the wellbore; and
>
> (d) applying pressure to the displacement fluid, the selected specific gravity of the displacement fluid being less than the specific gravity of the continuous liquid phase, to inject the continuous liquid phase into the formation to form a hydraulic fracture.

Id. at col. 15 ll. 51–60, col. 17 l. 1–col. 18 l. 7 (emphases added).

II

EnerPol accused Schlumberger of infringing independent claims 1 and 24 of the '491 patent along with dependent claims 2–17, 19, 21–23, and 25.

There are two claim terms at issue on appeal: "polymer-continuous liquid phase" in claim 1 and the claims that depend from claim 1; and "continuous liquid phase" in claim 24 and the claims that depend from claim 24. During claim construction proceedings, EnerPol argued that the term "polymer-continuous liquid phase" in claim 1 should be construed as two terms. Specifically, EnerPol argued that "polymer-continuous" means "comprising an accumulated network of polymer such that one could travel from one side of a given sample to another within the polymer network." J.A. 1233. EnerPol then argued that "liquid phase" means "a phase (e.g. polymer, mixture of polymer and a liquid) that takes the shape of its container." *Id.* By contrast, Schlumberger argued that "polymer-continuous liquid phase" should be construed as a single term having a plain and ordinary meaning. Schlumberger also argued that, "[f]or clarity, 'polymer-continuous liquid phase' means a polymer that is entirely in liquid form." *Id.*

The district court agreed with Schlumberger that, based on the claim language and specification, the term "'polymer-continuous liquid phase' should be construed as a single phrase." *EnerPol, LLC v. Schlumberger Tech. Corp.*, No. 17–394, 2018 WL 1335191, at *6 (E.D. Tex. Mar. 15, 2018) (*Decision*). "[T]o efficiently address the Parties' arguments," however, the district court then discussed the "polymer-continuous" and "liquid phase" components of the disputed claim term separately. *Id.* at *6–9.

First, the district court determined that based on the intrinsic evidence, "'polymer-continuous' requires the

polymer to be 'greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation.'" *Id.* at *6. In doing so, the district court rejected EnerPol's "overly broad" construction that included "a fluid with a polymer in any state," and also rejected Schlumberger's "unduly narrow" construction that required the "fluid to be a polymer entirely in a liquid state." *Id.* Second, the district court determined that "liquid phase" requires that the fracturing fluid include a "minimum amount of polymer in a liquid state, and does not exclude the possibility of a non-liquid component in the fracturing fluid." *Id.* at *9.

The district court therefore construed "polymer-continuous liquid phase" to mean "polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation." *Id.*

The district court next noted that the parties had agreed that the term "continuous liquid phase" in claim 24 should have the same meaning as "polymer-continuous liquid phase." *Id.* at *10. The district court therefore construed "continuous liquid phase" to also mean "polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation." *Id.* at *11.

Following the district court's claim construction decision, EnerPol moved for entry of final judgment of noninfringement. EnerPol also filed a stipulation of inability to prove infringement and a proposed final judgment. Schlumberger opposed EnerPol's motion and proposed a different stipulation specifying that Schlumberger's accused activities do not infringe the asserted '491 patent claims because they "do not satisfy either aspect of the Court's construction—*i.e.*, neither (i) 'polymer in a liquid state' nor (ii) 'that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation.'" J.A. 2676.

The district court granted EnerPol's motion and adopted, in relevant part, EnerPol's proposed final judgment. Paragraph 6 of the final judgment provides:

> 6. . . . [I]t is stipulated by [EnerPol] that under the Court's construction of "polymer-continuous liquid phase," EnerPol cannot prevail on the issue of infringement of claim 1 of the '491 patent or its dependent claims as to Schlumberger's Accused Services. EnerPol's Infringement Contentions identify the displacing of degradable thermoplastic polymer, such as polylactide resin . . . , as meeting the step of displacing a "polymer-continuous liquid phase" from the wellbore into the formation at a pressure greater than the fracturing pressure of the formation. This displacing does not involve displacing polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation. Therefore, under the Court's Claim Construction Order, EnerPol cannot meet the "polymer-continuous liquid phase" limitation of claim 1 or its dependent claims.

Final Judgment at 2, *EnerPol, LLC v. Schlumberger Tech. Corp.*, No. 17–394, (E.D. Tex. Oct. 5, 2018), ECF No. 124.

Paragraph 7 recites a nearly identical provision, stating, in relevant part, that EnerPol has stipulated that the accused activities "do[] not involve injection of polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation" and, therefore, EnerPol "cannot meet the 'continuous liquid phase' limitation of claim 24 or its dependent claims." *Id.* at 2–3.

The final judgment does not mention any of the other claim terms that had been construed by the district court.

EnerPol and Schlumberger appeal.

DISCUSSION

I

At the outset, Schlumberger contends that this court lacks jurisdiction to review EnerPol's appeal from the district court's noninfringement judgment under *Jang v. Boston Scientific Corp.*, 532 F.3d 1330 (Fed. Cir. 2008). Specifically, Schlumberger argues that EnerPol's appeal should be dismissed because the judgment does not clearly or specifically explain how the district court's constructions led to the noninfringement judgment, thus rendering any opinion by this court modifying those constructions advisory only. We disagree.

Section 1295 governs appeals to this court "from a final decision of a district court." 28 U.S.C. § 1295(a)(1). We have held that "to be appealable[,] a claim construction order must preclude a finding of infringement—a required element of the plaintiff's cause of action." *Princeton Dig. Image Corp. v. Office Depot Inc.*, 913 F.3d 1342, 1348 (Fed. Cir. 2019). We explained that "[s]uch preclusion of infringement may be established by the patent owner's binding admission that the accused activities are not infringing under the adopted claim construction." *Id.* "[W]here a claim construction order does not resolve the issue of infringement," however, it is "not a final decision, and, accordingly, is not appealable." *Id.* (citations omitted). We conclude that the district court's noninfringement judgment in this case resolves the infringement issue and thus constitutes an appealable final judgment.

Schlumberger's challenge to this court's jurisdiction relies primarily on *Jang*, in which we held that a "judgment is reviewable only if it is possible for the appellate court to ascertain the basis for the judgment challenged on appeal." *Jang*, 532 F.3d at 1334–35. In *Jang*, we concluded that because the stipulated judgment under review suffered from two ambiguities, it was appropriate to remand to the district court for clarification. *Id.* at 1335–36. First, it was

"impossible to discern from the stipulated judgment which of the district court's claim construction rulings would actually affect the issue of infringement." *Id.* at 1336. This ambiguity presented a "risk [of] rendering an advisory opinion as to claim construction issues that do not actually affect the infringement controversy." *Id.* Second, the "stipulated judgment provide[d] no factual context for the claim construction issues presented by the parties," namely, "how the disputed claim construction rulings relate to the accused products." *Id.* at 1337. This missing context made it difficult for this court to understand the issues and provide meaningful review.

Schlumberger argues that EnerPol's challenge to the district court's claim construction of "polymer-continuous liquid phase" consists of two requirements: the displaced polymer must be (1) "in a liquid state"; and (2) "greater than fifty percent (50%) by volume" of the fracturing fluid. In Schlumberger's view, EnerPol insisted on a vague judgment that fails to explain how and whether each of those two requirements led to noninfringement, and now challenges both requirements on appeal while refusing to concede that either one was dispositive. According to Schlumberger, this court thus "lacks jurisdiction to edit the district court's construction without knowing how such alterations would, or even could, affect noninfringement." Appellee's Br. 24 (citing *Jang*, 532 F.3d at 1336–37).

We are unpersuaded that the claim construction issues that EnerPol raises on appeal are unreviewable based on *Jang*. Contrary to Schlumberger's characterization of the record, the district court construed the disputed claim term—"polymer-continuous liquid phase"—"as a single phrase" with a single meaning. *Decision*, 2018 WL 1335191, at *6. The district court's judgment was indisputably based on that single phrase, and we review the district court's constructions as a single phrase. That EnerPol divided the phrase into two clauses during claim construction

and did not stipulate to noninfringement as to each clause individually does not alter the district court's single construction or remove our jurisdiction.

In stark contrast to the district court's final judgment in this case, the final judgment in *Jang* did not include any particular claim constructions that impacted infringement. Here, the district court's judgment—in particular, paragraphs 6 and 7—establishes "with certainty which of the claim construction disputes actually ha[d] an effect on the infringement issue." *Jang*, 532 F.3d at 1336. Paragraphs 6 and 7 of the judgment also expressly cite EnerPol's infringement contentions, and therefore provide enough "context with respect to how the disputed claim construction rulings relate to the accused products." *Id.* at 1337. Accordingly, *Jang* does not support Schlumberger's argument.

Schlumberger cites *SanDisk Corp. v. Kingston Technology Co.*, 695 F.3d 1348, 1354 (Fed. Cir. 2012), as additional support for the principle that where "a party's claim construction arguments do not affect the final judgment entered by the court, they are not reviewable." Schlumberger's reliance on *SanDisk* is misplaced. In *SanDisk*, we rejected the patent owner's argument that the district court's judgment of noninfringement conferred appellate jurisdiction over patent claims that the patent owner had voluntarily withdrawn from the action and were not included in the judgment. *Id.* at 1353–54. By contrast, this case does not concern the issue of appellate jurisdiction over claim construction arguments impacting only withdrawn patent claims. Rather, the final judgment specifically identifies both the asserted patent claims and the particular claim constructions impacting those claims.

None of Schlumberger's other cited authorities supports its position. In *Superior Industries, Inc. v. Masaba, Inc.*, the district court's "summary judgment opinion and order d[id] not explain how its construction *of any term*

would affect Superior's infringement claims." 553 F. App'x 986, 989 (Fed. Cir. 2014) (emphasis added). Thus, it was "impossible for [this court] to determine . . . which of the thirteen contested claim constructions would 'actually affect' the infringement analysis." *Id.* Here, the final judgment expressly identifies the two claim constructions that affect EnerPol's infringement claims. Likewise, the stipulated judgment of noninfringement at issue in *Massachusetts Institute of Technology & Electronics For Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1350 (Fed. Cir. 2006), "present[ed] only the question [of] whether the claim constructions adverse to the patentee were correct." We concluded that we would neither "consider claim construction issues decided *in favor* of the patent holder that the accused infringers contend were incorrect," nor "address issues that [we]re pertinent only to dismissed claims of invalidity," because revising the district court's constructions in those respects "would not affect the judgment of non-infringement." *Id.* (emphasis added). EnerPol's appeal presents no such issues.

At bottom, we are not persuaded by Schlumberger's challenge to our court's jurisdiction. The district court's final judgment clearly identifies the claim terms affecting the infringement analysis. Accordingly, we conclude that we have jurisdiction over EnerPol's appeal.

II

We next consider EnerPol's challenge to the district court's constructions of the two disputed claim terms: "polymer-continuous liquid phase" and "continuous liquid phase." Claim construction is a question of law that this court reviews de novo. *Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1362 (Fed. Cir. 2016). "The construction of claim terms based on the claim language, the specification, and the prosecution history are legal determinations." *Id.* Based on our review of the intrinsic

evidence, we discern no reversible error in either of the district court's constructions.

A

We agree with and adopt the district court's construction of "polymer-continuous liquid phase" in claim 1 and the claims that depend therefrom. The district court held that "polymer-continuous liquid phase" requires "polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation." *Decision*, 2018 WL 1335191, at *9. The claim language, specification, and prosecution history all support this construction.

The claim language recites using the polymer-continuous liquid phase as a fracturing fluid that is displaced into the rock formation to form a hydraulic fracture. Indeed, claim 1 recites that the "degradable thermoplastic polymer" is converted from "a solid bulk form" to a "polymer-continuous liquid phase" after it is transported down the wellbore. '491 patent col. 15 ll. 51–58. The claim further states that the "polymer-continuous liquid phase" is "displac[ed] . . . into the formation at a pressure greater than the fracturing pressure of the formation." *Id.* at col. 15 ll. 57–60.

Statements in the specification support this view of the claims and indicate that the degradable polymer begins as a solid and then becomes liquid, and that the "polymer-continuous liquid phase" acts as the fracturing fluid. For instance, the specification states:

> the degradable plastic may be placed in a wellbore near a formation to be fractured as a dispersed or discontinuous phase in a carrier fluid, so as to control pressure losses in the wellbore during placement. The degradable plastic is then *converted to a continuous or external phase* and *used as the*

> *fracturing fluid* to form a fracture near a wellbore, such that it has high effective viscosity in the fracture.

Id. at col. 3 ll. 58–65 (emphasis added). The specification also teaches that the degradable polymer:

> *may begin as a rigid solid* that is placed in the wellbore where it *becomes a viscous liquid* . . . that can be injected through the perforations and, *acting as a fracturing fluid*, exert fluid pressure on the rock around the well sufficient to hydraulically fracture the formation.

Id. at col. 7 ll. 15–21 (emphasis added).

Moreover, the specification expressly teaches that the degradable polymer becomes "continuous" when it is greater than about fifty percent by volume of the fracturing fluid. Specifically, the specification explains that the degradable polymer is "placed in the wellbore in the form of pellets or particles and transported through tubulars in the wellbore while dispersed in a low-viscosity carrying fluid." *Id.* at col. 7 l. 64–col. 8 l. 1. The degradable polymer is then:

> accumulated in the wellbore at a selected location . . . so that it becomes a *continuous or external* phase. Some amount of carrying fluid will then become dispersed (i.e., become the discontinuous phase) in the degradable polymer . . . . The fractional volume of degradable polymer in the carrying fluid-degradable polymer mixture when it is being pumped down the well should be in the range such that polymer is not the continuous phase or such that lubricated flow of the polymer occurs in the tubing until the polymer is near the depth it is to be injected . . . . *When degradable polymer becomes the continuous or external phase, the fraction of degradable polymer will have increased to greater than about 50 percent by volume.* Higher

> degradable polymer fractions are preferred because proppant concentration in the fracturing fluid and the fracture will be increased.

Id. at col. 8 ll. 1–27 (emphasis added).

As demonstrated by the teachings above, the specification uses the adjectives "continuous" and "external" synonymously when describing the degradable polymer. This suggests that the polymer encompasses the carrier fluid and then becomes the fracturing fluid. The specification's description of the degradable polymer as "external" thus further supports the district court's construction that the polymer be in a liquid state and greater than fifty percent by volume of the fracturing fluid. Indeed, we cannot see how the polymer could be both "external" and not liquid while also acting as the fracturing fluid.

Figures 2(a)–(e) and their accompanying written disclosures also support the district court's construction. These figures show that the degradable polymer begins as solid pellets dispersed in the carrier fluid (i.e., "discontinuous" phase), which then accumulate and degrade, converting to a "continuous" liquid phase that encompasses and "carries" the carrier fluid and any solid proppants before being injected into the rock formation to perform fracturing. *See id.* Fig. 2; *see also id.* at col. 9 ll. 1–5.

While the prosecution history is not particularly helpful in construing the term "polymer-continuous liquid phase," it supports the district court's construction over EnerPol's broad construction. For instance, one of the provisional applications to which the '491 patent claims priority described Figures 2(a)–(e) as depicting "pellets of degradable polymer with and without proppant and before and after coalescence of the pellets to form a *polymer-continuous phase*." J.A. 2228 (emphasis added). The applicant then amended the written description to insert the term "liquid" such that the description of Figures 2(a)–(e) recited a "polymer-continuous liquid phase." J.A. 2232. In

addition, the applicant amended the provisional application's written description to replace "thermoplastic" with "viscous liquid" when describing the degradable polymer after it is placed in the wellbore as a "rigid solid." J.A. 2229, 2233. Furthermore, the applicant distinguished a prior art reference on the basis of volume by weight of the fracturing fluid to overcome a rejection under 35 U.S.C. § 103. Specifically, the applicant argued that the cited reference taught a polymer concentration of "only about 4 per cent by weight, which is still . . . a dilute solution or dispersion of polymer in liquid" and not a "polymer-continuous liquid phase" as recited in the then-pending claims of the application that would issue as the '491 patent. J.A. 2980.

Reading the claim language in light of the specification, and in further view of the prosecution history, we conclude that the district court's construction is correct.

EnerPol reiterates its two-part construction on appeal, slightly modifying its definition of "liquid phase" to recite: "a phase (e.g., polymer, mixture of polymer and liquid) that takes the shape of its container *and has a fixed volume*."[1] Appellant's Br. 29 (emphasis added). EnerPol argues that the district court erroneously defined "polymer-continuous liquid phase" based on a single embodiment in the specification. In EnerPol's view, the disputed claim term does not require "liquid polymer" but merely requires that the "entire mixture exhibits liquid characteristics." *Id.*

We disagree. As discussed above, each time the specification refers to a "polymer-continuous liquid phase," it

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[1] EnerPol explained that its modified construction was meant to "clarif[y] that the 'liquid phase' . . . cannot be a gas," in response to the district court's claim construction decision. Appellant's Br. 29 n.11. Schlumberger has not challenged this modification on appeal, and we conclude that this modification does not impact our analysis.

describes the polymer converting from a solid to liquid before being displaced out of the wellbore and into the rock formation. It also repeatedly uses the terms "continuous" and "external" synonymously when describing the degradable polymer, further supporting the district court's construction that the polymer be in a liquid state so that the polymer can be external in the fracturing fluid.

The district court's construction interprets the claim in light of the specification and does not, as EnerPol argues, import a limitation into the claim based on a single embodiment. By contrast, EnerPol's proposed construction ignores crucial teachings in the specification and would result in a polymer-continuous liquid phase that cannot function as a fracturing fluid. We have considered EnerPol's other arguments but we do not find them persuasive.

B

The district court construed "continuous liquid phase" in claim 24 and the claims that depend therefrom to also mean "polymer in a liquid state that is greater than fifty percent (50%) by volume of the fluid that does the fracturing in the formation." *Decision*, 2018 WL 1335191, at *11. There was no dispute that the term "continuous liquid phase" should be interpreted to have the same meaning as "polymer-continuous liquid phase." *Id.* at *10. Accordingly, we discern no error in the district court's construction of "continuous liquid phase."

CONCLUSION

For the foregoing reasons, we affirm the district court's judgment of noninfringement.

AFFIRMED

COSTS

No costs.