

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PERMIAN GLOBAL INC., AND
MANTICORE FUELS, LLC
Petitioners

v.

FUEL AUTOMATION STATION, LLC,
Patent Owner

Case No. IPR2023-01236
Patent 10,815,118

PETITIONERS' REPLY TO PATENT OWNER'S RESPONSE

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I. INTRODUCTION

Regarding claims 1-3 of the ‘118 Patent, Patent Owner (“PO”) concedes in its Response (“POR”)¹ that the prior art discloses each and every element of the claims. PO only disputes whether a POSITA would have deemed it obvious to combine those elements. PO insists that combining *Van Vliet* with *Coxreels* would not have been obvious because *Coxreels*’ 1125 series reels could not have been used in a system delivering sufficient fuel for a fracturing operation. But PO assumes an improper bodily incorporation standard; a POSITA would have found it obvious to combine *Coxreels*’ ***teachings*** of a flow passage running through a reel regardless of PO’s arguments. Even if PO were correct about the standard for establishing obviousness here, a POSITA would have deemed that more specific combination obvious as well. PO’s arguments to the contrary rely on unsupported assumptions regarding the demands of *Van Vliet*’s refueling system and the ‘118 Patent claims. At most, PO’s arguments indicate that *Coxreels*’ reels might not have been ideal for certain applications of *Van Vliet*’s systems. But *Coxreels*’ reels need not have been ideal or even appropriate for every conceivable use of *Van Vliet*’s system for a POSITA to arrive at the claimed combination of elements in the ‘118 Patent.

¹ Paper 15 (dated May 31, 2024).

The ‘118 Patent’s remaining claims add the simple requirements that the hoses include a tube circumscribed by a separate sleeve, which would have been obvious in view of *Shoap*. PO’s arguments to the contrary again assume improper bodily incorporation standards and ignore evidence that a POSITA would have found it obvious in *Van Vliet* to form a wired hose using a tube and separate sleeve using commercially-available components to prevent damage to the hose.

Finally, PO’s limited evidence of secondary considerations lacks any nexus the allegedly-novel elements in the ‘118 Patent claims, and is otherwise insufficient to overcome Petitioners’ strong case that the ‘118 Patent claims were obvious.

II. CLAIM CONSTRUCTION

For purposes of this proceeding, Petitioners do not dispute the Board’s preliminary finding that “claims 5, 10, and 15 assume physically separate structures for the claimed ‘tube’ and ‘sleeve.’” *See* Paper 11, page 8.

To the extent PO seeks further constructions of “tube”, “sleeve”, and “that circumscribes the tube” (POR, 14-15), Petitioners disagree that these phrases require any further construction. There is no basis for rewriting these plain English words (*e.g.*, “a tube” as “a hollow cylinder”, “circumscribes” as “encircles”) or narrowing them to specific functions that PO would add (*e.g.*, “tube” must “convey[] fluid or function[] as a passage”). *See Edgewell Pers. Care Brands, LLC v. Munchkin, Inc.*, 998 F.3d 917, 921 (Fed. Cir. 2021) (“it is usually improper to construe non-

functional claim terms in apparatus claims”); *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (claim construction “is not an obligatory exercise in redundancy”). Indeed, the definitions in PO’s response are strictly based on extrinsic dictionaries with no reference to the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318-19 (Fed. Cir. 2005) (en banc) (extrinsic evidence “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence”); *Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001, 1008 & 1010 (Fed. Cir. 2023).

III. GROUND 1

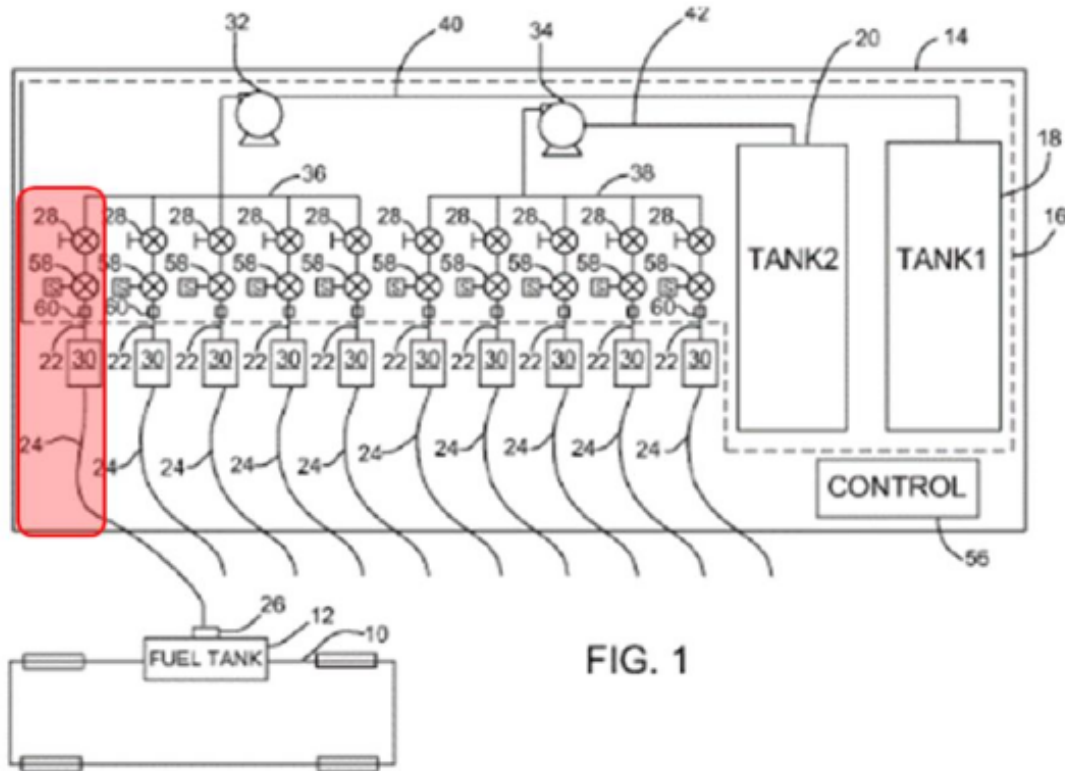
A. *Van Vliet* teaches to a POSITA flow passages “running through” the reels that are connected to the hose and manifold.

PO does not dispute that *Van Vliet* discloses flow passages connected to the hoses and the manifolds. PO only disputes whether those flow passages “run[] through” the reels or are connected to the manifolds “via the reels”. The parties’ experts agree that *Van Vliet*’s Figure 1 is a schematic that shows fluid flow, *i.e.*, the relationships between components through which fluid flows in the system. EX1003, ¶¶112, 116-119; EX1049, 54:16-55:14.² That schematic shows that reel 30 is part

² EX1049 is the transcript of the deposition of Dr. John Rodgers. EX1050 includes that same transcript and Exhibits 4, 12, and 14 to Dr. Rodgers’ deposition. However, in doing so, Petitioners do not waive their objections to Rodgers

of a single fluid stream that includes manifold 36/38, fluid outlet 22, and hose 24.

EX1003, ¶118 (“single fluid stream” annotated in red).



Accordingly, a POSITA would have understood that fluid stream to be a “flow passage” that runs through reel 30. *Id.*

Contrary to PO’s arguments, claims 1 and 15 do not necessarily require reels that are fluidly connected to the manifolds and hoses. Claims 1[e] and 15[d] recite

Deposition Exhibit 14 or to Dr. Rodgers’ testimony about it. Petitioners are concurrently moving to seal EX1050 because PO designated Rodgers Deposition Exhibit 14 as containing material under the parties’ agreed protective order.

only that the flow passages “run[] through” the reels, and claims 1[f] and 15[e] recite only that the hoses are connected to the flow passages “via the reels”. PO has not sought any construction of these elements, and their plain language only specifies the flow passages’ locations relative to the reels.

PO argues that *Van Vliet*’s Figure 1 fails to show the claimed arrangement because it instead indicates a flow passage “wrapping around a reel”. POR, 16.³ But a hose wrapped around the reel’s spindle would necessarily “run through” at least some portion of the reel’s cross-sectional area. *See* EX1003, ¶¶116, 121, 126. PO also argues that *Van Vliet*’s hoses 24 cannot be connected to the reels 30 because the hoses are connected to dry connections that “are not part of the reel”. POR, 16-17. But claims 1[f] and 15[e] only require that the hoses are “***connected*** with the flow passages ***via*** the reels”.⁴ The Board has already found in an IPR of a related patent

³ PO also points to nothing in *Van Vliet*’s Figure 1 describing that specific arrangement. *Compare* EX1004, Fig. 1 *with* EX1001, Fig. 4.

⁴ Emphasis has been supplied and internal citations have been omitted throughout this Reply unless otherwise noted.

that “connected” does not necessarily require a fluid connection,⁵ and “via” simply indicates where the connection occurs. Both this requirement and claims 1[e] and 15[d] would be met, for example, by a separate conduit connected to a manifold that is passed through a portion of a hollow spindle of the reel and out an opening in the spindle’s surface to connect to one end of the hose. This arrangement is fully consistent with *Van Vliet*’s Figure 1, and PO does not address it at all.

Even if the ‘118 Patent claims require that the reels be fluidly connected to the manifolds, *Van Vliet* teaches that too. *Van Vliet* discloses that a spill containment pan is positioned to catch fluids leaking *from the reels*. EX1004, [0022]. For fluids to leak from reels, fluids must be flowing through the reels, and the reels must be connected to a manifold to receive fluid. EX1003, ¶121. PO tries to rewrite this disclosure, arguing that it really refers to fluids leaking from other components such as the valves or dry connections “near the reels”. POR, 17 (citing EX2011, ¶107). But that is not what *Van Vliet* describes. See *Ericsson Inc. v. Intellectual Ventures I LLC*, 890 F.3d 1336, 1346 (Fed. Cir. 2018) (Board’s reliance on expert testimony

⁵ See IPR2023-01238, Paper 11, at 7-8 (“Had the patentee desired to limit the claims to fluid connections, the patentee could have used the explicit language throughout”).

that prior art reference did not disclose claimed element was erroneous where testimony was “plainly inconsistent with” the reference).

IV. GROUNDS 1A AND 2A

PO does not dispute that *Van Vliet* discloses a plurality of hose reels on a trailer, and that *Coxreels* discloses hose reels having flow passages and connections as recited in claims 1 and 15. PO only disputes whether a POSITA would have deemed it obvious to combine *Coxreels* with *Van Vliet*. Each of PO’s arguments fails to refute Petitioners’ *prima facie* showing of obviousness.

A. Under the correct legal standard, a POSITA would have been motivated to combine the teachings of *Coxreels* and *Van Vliet*.

Ground 1A relies on hose reels 30 of *Van Vliet* for the “plurality of hose reels on the mobile trailer”—claims 1[d] and 15[c]. Paper 3 (“Pet.”), 37 (cross-referencing §VIII.A.5.), 60, 68; *see also* EX1003, ¶¶155, 217, 244. As explained in the Petition, a POSITA “would have looked to commercially-available reel components *like those described in Coxreels*” and “reference[d] information” about such reels to understand how to design *Van Vliet*’s system and its components such as the reels. Pet., 35-36; EX1003, ¶¶149-150. A POSITA would have recognized advantages of the flow passage in *Coxreels*’ reels (*e.g.*, “a non-crimping, flat smooth hose wrap”) to facilitate connection to the manifolds and hoses of *Van Vliet*’s system. Pet., 36-38; EX1003, ¶¶150-152. Since hose reels having such flow passages were well known and commercially-available, incorporating a flow passage into *Van Vliet*’s

reels would have been a “predictable variation” to implement. Pet., 36; EX1003, ¶¶158-160. Therefore, a POSITA would have been motivated to modify *Van Vliet*’s system to include flow passages like those in *Coxreels* to run through the reels of *Van Vliet*’s system. Notably, this combination of *Coxreels*’ teachings with *Van Vliet* does **not** require a wholesale substitution of *Van Vliet*’s hose reels with *Coxreels*’ reels. Ground 1A expressly relies on *Van Vliet*’s reels 30 for claims 1[d] and 15[c], and the addition of a flow passage from *Coxreels* does not negate that.

PO’s arguments that the Coxreels 1125 Series reel “would have been unsuited for an automated fueling station” (POR, 19-22) or “would have resulted in an undesirable operating configuration” in *Van Vliet* (POR, 22-27) fail because they attempt to hold Petitioners to an improper bodily incorporation standard. These arguments dispute whether a POSITA could implement an ***illustrated embodiment*** of *Coxreels* with an ***illustrated embodiment*** of *Van Vliet*. But “[t]he test for obviousness is not whether the features of [*Coxreels*] may be bodily incorporated into the structure of [*Van Vliet*].” *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (quoting *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981)). Instead, the question is whether “a skilled artisan would have been motivated to combine the ***teachings of the prior art references to achieve the claimed invention***[.]” *Id.* (quoting *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007)); see *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir.

2012) (“a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements”). Indeed, the Federal Circuit has explained that whether one reference can be incorporated in another is “basically irrelevant” since obviousness asks only “whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole.” *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc).

PO’s “unsuitability” argument (POR, 19-22) improperly focuses on characteristics of specific materials of specific reel models in *Coxreels*—including components and materials that the Petition does not rely upon in the Grounds—and their ***physical incorporation*** into *Van Vliet*. But this argument is irrelevant to whether a POSITA would have combined *Coxreels*’ ***teachings*** of a flow passage running through a reel with *Van Vliet*. PO’s “undesirable operating configuration” argument (POR, 22-27) is perhaps even more irrelevant. It assumes not only physical incorporation but also certain requirements and parameters for hypothetical uses of *Van Vliet*’s system that are discussed nowhere in that reference. *See* POR, 23-24 (e.g., fuel rates of 7,500-24,000 gallons per 12 hours for fracturing operations, maximum pump pressure of 60 psi). Accordingly, Petitioner has shown that a POSITA would have been motivated to combine *Coxreels* and *Van Vliet*, and PO has failed to rebut this showing under the proper standard.

PO also complains that *Coxreels*' reels were only marketed for the oil industry generally, not specifically for fuel delivery in fracturing.⁶ POR, 18. But PO does not dispute that *Coxreels* is analogous art under *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). Nothing in *Bigio* or other obviousness law requires specific marketing or other explicit motivation to use *Coxreels* for refueling. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) (cannot assume "a [POSITA] attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem"). Indeed, PO's expert Dr. Rodgers admitted that a POSITA would have considered hose reels from even more unrelated agriculture and irrigation applications for *Van Vliet's* refueling system. EX1049, 34:14-36:22; EX1051, Abstract;⁷ see also EX1005, 1 (references "agricultural spraying" and "farming" applications).

B. A POSITA would have found it obvious to incorporate *Coxreels*'

⁶ PO's argument is wrong. The *Coxreels* website marketed its reels for "Petroleum", which includes fuels such as diesel. EX1009, 5-6.

⁷ Dr. Rodgers' declarations mistakenly cite "Exhibit 2007" in this IPR (EX2011, ¶64) and "Exhibit 2008" in IPR2023-01238, neither of which were provided with PO's responses. However, Dr. Rodgers confirmed at his deposition that he was referencing the document attached here as EX1051. EX1049, 36:6-17.

reels into *Van Vliet's* system.

Even if Ground 1A required physically incorporating *Coxreels'* reels into *Van Vliet's* system, that combination would have been obvious to a POSITA as well, at least since *Coxreels'* reel was “a cost-effective and readily available option”. Pet., 36; EX1003, ¶150.

PO argues that *Coxreels'* reel contains either (a) a brass inlet that would have been unsuitable for use with diesel, or (b) an AFLAS seal that would not withstand temperatures below -3°C. POR, 20-22. Again, the '118 Patent claims do not require incorporating either of those specific materials from *Coxreels*, and so PO's argument is “basically irrelevant” to Petitioners' grounds. *See* §IV.A, *supra*. But assuming, *arguendo*, that a POSITA would incorporate those additional materials into *Van Vliet's* trailer, they do not undermine the obviousness of that combination.

Regarding *Coxreels'* AFLAS seal, Dr. Rodgers only asserted that refueling systems in fracturing are exposed to **outdoor** temperatures in that range. EX1049, 127:22-128:4. PO presents no evidence that the **interior** of *Van Vliet's* trailer—where the reels are located—would reach those temperatures for sufficient time to compromise the seal.⁸ PO also wrongly assumes that a POSITA would have had

⁸ Indeed, if it did, the diesel fuel would become more viscous (less pumpable), and so a POSITA would have already taken measures to keep the interior of *Van*

to build *Van Vliet's* system for extremely cold climates. To the contrary, many refueling companies would have designed systems for regions with warmer climates. EX1049, 129:21-130:10; EX1055, ¶¶15-16. Regarding *Coxreels'* brass inlet, PO's evidence only indicates that exposure to brass may promote formation of gel deposits in vessels where diesel is stored for extended periods or at (unspecified) high temperatures, and also teaches using deactivators to counteract those issues where necessary. EX2024, 9 (§X3.1.1 & §X.3.2.3.1). Therefore a POSITA would not have been discouraged from using a brass inlet with diesel. In any event, neither *Van Vliet's* refueling system nor the '118 Patent is limited to diesel,⁹ and nothing suggests that *Coxreels'* reels with brass inlets would be unsuitable with other fuels.

At most, PO's evidence indicates that hose reels with brass fluid inlets or AFLAS seals might have been less optimal for certain fuels or extreme environments without further modifications. But that does not refute obviousness, particularly for

Vliet's trailer carrying diesel above that temperature. EX1055, ¶¶17-18; *see* EX1049, 129:5-12.

⁹ EX1004, Title (“**Fuel** Delivery System and Method”); EX1001, 2:5-10 (“station 20 may be used in mobile delivery of **other fluids**”).

many other uses that a POSITA would have considered.¹⁰ *Corephotonics, Ltd. v. Apple Inc.*, No. 2020-1961, 2021 WL 4944471, at *6 (Fed. Cir. Oct. 25, 2021) (“[I]t is a commonplace fact that design decisions entail making tradeoffs among multiple objectives,” but “this does not necessarily obviate motivation to combine” (quoting *Allied Erecting and Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016))); *Fatigue Fracture Technology, LLC v. Navistar, Inc.*, 2020 WL 7689819, *4–*5 (Fed. Cir. 2020) (nonprecedential) (rejecting patentee’s argument that a POSITA would not be motivated to use prior art process for manufacturing rods that was too slow; the claims did not specify a timeframe, and prior art would be faster for certain types and sizes of rods).

PO’s next argument relies on a hypothetical model created by its expert to argue that **certain** models of *Coxreels*’ reels for **certain** hose sizes and lengths would have required pumping fuel in *Van Vliet*’s system at unsuitably high pressures to deliver sufficient fuel for **certain** fracturing operations. POR, 22-27. But, again,

¹⁰ And if a POSITA considered these materials unsuitable for a particular application, they would have used alternative non-corrosive materials. EX2029, 76:3-21; EX1055, ¶19; see *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007) (“we do not ignore the modifications that [a POSITA] would make to a device borrowed from the prior art”).

none of the Petition, the prior art, or the ‘118 Patent claims require any particular hose size or length, model of *Coxreels*’ reels, or volume of fuel.¹¹ Nor is *Van Vliet* or the ‘118 Patent limited to delivering fuel for fracturing operations of any particular size. Indeed, the ‘118 Patent claims are *apparatus* claims that only recite “[a] distribution station” with no limitations on its intended use. EX1001, claims 1, 10, and 15; see *Edgewell Pers. Care Brands*, 998 F.3d at 921 (apparatus claim covers what the apparatus is and not what it does). Therefore, Dr. Rodgers’ model is irrelevant to whether a POSITA would combine certain teachings of *Coxreels* with *Van Vliet* to arrive at the ‘118 Patent claims. See §IV.A, *supra*.

Even if Dr. Rodgers’ model was relevant, it does not support his own opinions. Dr. Rodgers asserts that *Van Vliet*’s system using *Coxreels*’ reels would need to pump fuel at a pressure of 440 psi to deliver 7,500 gallons in 12 hours. POR, 25. However, his declaration does not show any such calculation, and the model from

¹¹ See also EX1055, ¶41 (not all fracturing jobs require 7,500 gal/12 hours, citing EX2030).

his declaration's Appendix does not produce that pressure at the stated parameters.

EX2011, page 61; EX1052;¹² EX1055, ¶¶22-23.

The model also rests on numerous unsupported assumptions about parameters for refueling systems like *Van Vliet's*. First, Dr. Rodgers assumes that *Van Vliet's* system would have required 700-foot hoses purportedly based on the testimony of Petitioners' expert Dr. Durham. POR, 22-23; EX2011, ¶135. But Dr. Durham never said that 700-foot hoses were required. EX2029, 68:6-17 ("[I]t depends. ... A different designer...may choose a smaller length."). PO's assumption also ignores evidence of refueling systems like *Van Vliet's* with hoses only 200-450 feet long. EX1048, 3 ("300-450' feet of 1" hose"); EX2011, page 61 ("A" and "B" listing 200-foot hose lengths);¹³ EX1055, ¶25. And PO's assumption of hoses having an inner

¹² Exhibit 12 to Dr. Rodgers' deposition was a native Excel file, which Petitioners understand cannot be filed with the Board. In EX1052, Petitioners have provided PDF prints of that file from the normal view (pages 1-4) and the "Show Formulas" view (pages 5-8) in Excel.

¹³ PO made EX1048 an exhibit to Dr. Durham's deposition in this proceeding, the transcript of which PO made of record. EX2029, 56:5-12. Moreover, Dr. Durham's deposition was conducted jointly in this IPR and IPR2023-01236 at PO's

diameter of only 3/8-inches depends on the same incorrect assumption about hose length. POR, 23; EX2011, ¶135; *see also* EX1055, ¶26.

Dr. Rodgers also assumes that *Van Vliet's* system would only dispense fuel from 3 hoses simultaneously, even though *Van Vliet* and similar refueling systems included many more hoses. EX1004, Fig. 1 (10 hoses); *see also* EX1048, 3 (prior art refueling system having 24 hoses); EX1055, ¶¶27-30. Finally, Dr. Rodgers assumes that a POSITA would consider operating pressures above 60 psi unacceptable because they would risk spilling large amounts of fuel if a hose is damaged. POR, 24; EX2011, ¶141. But the hoses he assumed were rated for 90-150 psi pressures, and *Van Vliet* already had other safeguards such as override valves and pans to limit spills. EX2011, ¶149; EX1031; EX1004, ¶¶0020, 0022-0023; EX1055, ¶34. Dr. Rodgers conceded that these assumptions were based solely on his general expertise (and hindsight hearsay regarding PO's current systems), but he

request. *See* EX1054 (PO's email of 5/3/24); EX2029, pg.i-1. Therefore, PO has already made EX1048 of record, and Petitioners simply provide a copy of it to conform the record. *See Intex Recreation Corp. et al v. Team Worldwide Corp.*, IPR2018-00874, Paper 149, at 129-131 (PTAB Oct. 25, 2019) (proper to maintain deposition exhibits in the record when the deposition covered multiple, related proceedings).

has no prior experience in operating or even observing refueling systems during fracturing operations. *See* EX1049, 14:5-21; 15:12-22; 16:23-25; 146:3-148:12; 149:8-16; 150:8-12; 152:21-153:22. Since Dr. Rodgers' arbitrary assumptions are contrary to the evidence, his opinions are entitled to no weight. *See Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1022 (Fed. Cir. 2017). In fact, assuming hose sizes, lengths, and numbers consistent with the prior art, Dr. Rodgers' model shows that even a single *Van Vliet* system using *Coxreels*' reels could deliver sufficient fuel for many fracturing operations within the hoses' pressure limits of 90-150 psi and even Dr. Rodgers' artificially-low operating pressure limit of 60 psi. *See* EX1058;¹⁴

¹⁴ Dr. Rodgers testified that EX1052 and his Appendix to EX2011 is a "generic calculator" that was produced in "whatever state the file was left in" when he provided it to PO's attorneys, but that "you can just change those input numbers [shaded in blue] to get a different condition." EX1049, 160:1-162:7. EX1058 is a modified version of the first page of EX1052 that reproduces model "B" from EX1052 as "B_1" through "B_4" but changes the inputs in the green shaded cells, including the corrected "total flow rate" of 21.5 gpm, consistent with Dr. Rodgers' testimony. EX1049, 167:5-20. The resulting calculated hose pressures are shaded in yellow and total pressures are shaded in orange.

EX1055, ¶¶35-41. So, if anything, Dr. Rodgers' model confirms that the combination would have been obvious.

V. GROUND 2, 2A, AND 3.

A. *Shoap* renders obvious “a hose having a tube and a sleeve circumscribing the tube”.

PO does not dispute that *Shoap* discloses a wired hose having at least integrated inner and outer conduit surfaces. Pet, 47-48; EX1003, ¶¶181-182; EX1006, Fig. 1A, 4:51-5:3. PO also does not dispute that a POSITA could have formed the wired hoses of *Shoap* using a separate tube and sleeve circumscribing it as claims 5, 10, and 15 require. PO merely argues that the Petition does not show why a POSITA would have done so. POR, 28-29. To the contrary, the Petition and Dr. Durham noted that separate protection sleeves for hoses were well-known and commercially available at the time of the '118 Patent, and would have been within the finite set of known solutions to protect *Van Vliet's* hoses from damage at a well site. Pet. 48-49; EX1003, ¶183 (cross-referencing ¶¶70-72); *cf.* Pet., 56 (discussing dependent claim 11); EX1003, ¶208. PO does not dispute this rationale, which is more than sufficient to establish obviousness. *See KSR*, 550 U.S. at 421.

PO cries foul on Petitioners' assertion that a POSITA “would have looked to existing hose designs that enable compact, safe, and convenient wire placement” as using hindsight to “jump[] directly to a wired hose”. POR, 29-30. But PO ignores the express teachings of *Haile* to use such a wired hose in a mobile automated fueling

system. *See* Pet., 44; EX1003, ¶172 (citing EX1029); *cf.* Pet., 43-44; EX1003, ¶¶169-172 (discussing additional motivations). The mere existence of potential drawbacks to this design or of alternative designs does not defeat the obviousness of that rationale. *See Corephotonics, Ltd. v. Apple Inc.*, 2021 WL 4944471, at *6; *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004) (“our case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art”).

B. *Shoap*’s slip-ring assembly does not defeat the Petition’s obviousness case on dependent claim 7.

PO argues that a POSITA would have been discouraged from using *Shoap*’s “slip ring assembly 1372” in *Van Vliet*’s system due to fire hazards. POR, 31-32. As an initial matter, neither the Petition nor Dr. Durham relies on *Shoap*’s “slip ring assembly 1372” for any element of the ‘118 Patent claims. PO does not dispute that, in the asserted combination of *Van Vliet* and *Shoap*, the sensor communication line would be routed through the reels, as claim 6 requires. Pet., 49. Regarding claim 7, which depends from claim 6, the Petition simply asserts that “any system having communication lines routed through the bodies of the reels would require respective connectors for each communication line,” and it would have been an obvious design choice to mount those connectors on the reel. Pet., 49-50 (citing EX1003, ¶¶190-192). PO does not dispute this logic at all, none of which requires the use of *Shoap*’s “slip ring assembly 1372” or any of its components. Dr. Durham merely referenced

Shoap's slip ring assembly as one example of how to mount those connectors to the spindle of the reel. EX1003, ¶192 (“...***particularly in light of*** the teachings of *Shoap* with regard to a slip-ring assembly mounted on the spindle of the reel...”).

Even if Petitioners relied on certain components or aspects of *Shoap*'s “slip-ring assembly 1372”, the law does not require a POSITA to find it obvious to include every component of that assembly in using *Shoap*'s teachings to modify *Van Vliet*. See, e.g., *Etter*, 756 F.2d at 859. In other words, a POSITA would not have had to include *Shoap*'s entire slip ring assembly into *Van Vliet* to arrive at the combination of claim 7. And even if a POSITA had to include the slip ring assembly to make the proposed combination, it would have been well within their skill to take precautions to address potential fire hazards in a refueling system.¹⁵ See *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007) (“we do not ignore the modifications that [a POSITA] would make” to a prior art device).

¹⁵ Moreover, the ‘118 Patent claims do not require a ***fuel*** distribution system, and the ‘118 Patent specification expressly contemplates delivery of “other fluids”. EX1001, 2:6-10.

C. It would have been obvious to a POSITA to use a fabric sleeve as recited in dependent claim 11.

Much like PO's arguments regarding *Coxreels*, its argument regarding the Desihose website applies an improper bodily incorporation standard, asserting that a POSITA would not have deemed it obvious to use the specific fabric sleeve discussed on that website in *Van Vliet's* refueling system. POR, 33. But the Petition does not combine the specific hose from that website with *Van Vliet*. Rather, the Petition asserts that “*many* fabric covered hoses, or fabric protected hose sleeves were commercially available at the time of the ‘118 Patent, and were part of a finite set of known options for protecting hoses from damage,” which PO does not dispute. Pet., 56 (citing EX1003, ¶208). This is sufficient to support a *prima facie* case of obviousness. *See KSR*, 550 U.S. at 421. Dr. Durham merely cites the Desihose website (among others) as evidence that a POSITA would have known how to form fabric-covered hoses or use fabric protection sleeves with hoses. *See* EX1003, ¶¶70-72 (citing EX1032-EX1034).¹⁶ Even if one particular fabric-covered hose was not

¹⁶ Even if EX1032-EX1034 do not qualify as prior art, they are still relevant evidence supporting Dr. Durham's un rebutted testimony regarding a POSITA's knowledge. *See In re Farrenkopf*, 713 F.2d 714, 720 (Fed. Cir. 1983) (non-prior art

suitable for *Van Vliet's* refueling system, it would have prompted a POSITA to consider other fabric sleeves that were. Contrary to PO's argument, it is permissible to rely on a POSITA's background knowledge of fabric protection sleeves for hoses, particularly where, as here, PO does not dispute that such sleeves would have been well-known to a POSITA. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (obviousness "not only permits, but *requires*, consideration of common knowledge and common sense" (emphasis in original)).

VI. SECONDARY CONSIDERATIONS

As an initial matter, the Board cannot presume nexus to the '118 Patent as PO suggests. POR, 34-35. PO relies on the same evidence of secondary considerations for this patent as well as the different claims of the '805 and '955 Patents. *Compare* POR, 35-40 with IPR2023-01237, Paper 13, 39-45 & IPR2023-01238, Paper 15, 50-55.¹⁷ But "the same evidence of secondary considerations cannot be presumed to be attributable to two different combinations of features." *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1378 (Fed. Cir. 2019).

evidence contemporaneous with the critical date of the patent has been held competent to show knowledge in the art).

¹⁷ PO also marks its refueling units with at least 15 other patents, further rebutting any nexus to the '118 Patent. *See* EX2031, 1.

A. Alleged Praise and Commercial Success

PO also lacks sufficient evidence that its refueling systems practice the ‘118 Patent’s claims. PO provides only Dr. Rodgers’ bare conclusion that PO’s units practice the independent claims and three screenshots from a YouTube video.¹⁸ EX2011, ¶179. Without mapping the claim elements to components of PO’s systems, Dr. Rodgers’ bare conclusions cannot support nexus. *Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1211 (Fed. Cir. 2023); *TalexMedical, LLC v. Becon Med. Ltd.*, No. 2021-2069, 2022 WL 2898934, at *9 (Fed. Cir. July 22, 2022). Even the screenshots do not show several claimed elements:

- flow passages running through reels;
- pump on trailer;
- fluid level sensors connected to hoses;
- valves between manifold and reels;
- controller to operate valves; and
- hoses including separate tubes and sleeves (claims 5, 10, and 15).

¹⁸ These screenshots are also only demonstratives, not evidence of record.

Moreover, any nexus is disproven by PO's own arguments about the alleged benefits of its refueling systems. For example, both the award to the '118 Patent's inventor and PO's response tout benefits of "hot refueling" and removing workers from a "hot zone" around fracturing equipment. EX2045, 5; POR, 2-3. But those benefits are not enabled by the purportedly-novel elements in the claims. See EX1055, ¶¶7-8. Indeed, the *Van Vliet* and Frack Shack systems claimed these benefits,¹⁹ and the claims' elements allegedly absent from *Van Vliet* (e.g., fluidly-connected hose reels, hoses with separate tubes and sleeves) have nothing to do with the allegedly-praised and successful benefits. See EX1055, ¶¶7-8. Praise or success of PO's system based on features in prior art refueling systems cannot rebut the obviousness of claims that simply add *other* features. See *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016) (discounting evidence relating to features in the prior art); *Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023, 1034-35 (Fed. Cir. 2016) (similar); *Bayer Healthcare Pharm., Inc. v. Watson Pharm., Inc.*, 713 F.3d 1369, 1377 (Fed. Cir. 2013) ("praise of what was clearly rendered obvious"

¹⁹ EX2011, ¶¶62, 77; EX1003, ¶¶43, 81; EX1004, [0002]-[0003] ("[d]angers" onsite, system "reduc[es] the likelihood that a fuel tank ... during fracturing ... will run out of fuel"); EX1017, 1-2 ("remove[s] workers from the hot zone" and "[n]o slow down or stopping to refuel").

is not persuasive). PO also argues that wired fluid level sensors (instead of wireless) contributed to its systems' alleged success. POR, 4-6. But none of the '118 Patent's independent claims require wired sensors.²⁰ See EX1055, ¶6; *Ethicon Endo-Surgery*, 812 F.3d at 1034 (discounting success from unclaimed features).

B. Alleged Copying and Licensing

First, PO merely accused Petitioners and Comanche of infringing its patents. POR, 35-38. Even if they were found to infringe—and they were not—infringement is not the same as copying. See *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010); *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). Aside from bare attorney argument, there is no evidence that Petitioners or anyone else copied its systems. Petitioners' citing of PO's '805 Patent as prior art in a patent application is not copying either. POR, 35. If anything, it suggests the opposite—that Petitioners thought their invention was patentable over PO's and therefore different, and Petitioners simply had a duty of candor to cite known art.

Regarding Comanche's license, PO merely asserts that Comanche took a license to settle litigation. POR, 39. PO provides no evidence of the agreed royalty

²⁰ *Van Vliet* also discloses wired sensors. See EX1004, [0020]; EX1003, ¶177; EX1055, ¶6.

amount or the license's other terms, that Comanche acknowledged practicing PO's patents, or has actually paid *any* royalties. Such limited evidence of a single license should have no weight. *See In re Cree, Inc.*, 818 F.3d 694, 703 (Fed. Cir. 2016) (based solely on affidavits "it is difficult for the court to determine if the licensing program was successful either because of the merits of the claimed invention or because they were entered into as business decisions to avoid litigation, because of prior business relationships, or for other economic reasons"); *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995) (similar).

PO's only arguable secondary considerations consist of one award, a single license agreement, and a measure of its system's commercial use with no context for its pervasiveness in the market. POR, 35-40. Such limited evidence cannot overcome Petitioners' strong obviousness case.

Respectfully submitted,

BAKER BOTTS L.L.P.

August 28, 2024
Date

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CERTIFICATE OF COMPLIANCE

I hereby certify that this Petitioners' Reply to Patent Owner's Response complies with the type-volume limitations of 37 C.F.R. § 42.24(c)(1) because it contains 5,586 words (as determined by the Microsoft Word word-processing system used to prepare the reply), excluding the parts of the reply exempted by 37 C.F.R. § 42.24(c).

Dated: August 28, 2024

By: /Elizabeth D. Flannery/

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IPR2023-01236

U.S. Patent No. 10,815,118

CERTIFICATE OF SERVICE

In accordance with 37 C.F.R. § 42.6(e), the undersigned certifies that on August 28, 2024, a complete and entire copy of the foregoing **PETITIONERS' REPLY TO PATENT OWNER'S RESPONSE** and supporting exhibits were served on Patent Owner via electronic mail at the below addresses:

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Dated: August 28, 2024

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