

Federal Court



Cour fédérale

Date: 20181019

Docket: T-2149-14

Citation: 2018 FC 1047

Ottawa, Ontario, October 19, 2018

PRESENT: The Honourable Mr. Justice Manson

BETWEEN:

**FRAC SHACK INC. AND FRAC SHACK
INTERNATIONAL INC.**

**Plaintiffs /
Defendants by Counterclaim**

and

AFD PETROLEUM LTD

**Defendant /
Plaintiff by Counterclaim**

JUDGMENT AND REASONS

I. Introduction

[1] This is the redetermination of a number of issues returned to this Court by the Federal Court of Appeal [FCA] in *AFD Petroleum Ltd v Frac Shack Inc*, 2018 FCA 140 [Trial Judgment].

[2] In the Trial Judgment, I considered the validity and infringement of Canadian Patent No. 2,693,567 [the '567 Patent] owned by Frac Shack Inc. [the Plaintiff, or Frac Shack]. I found that

certain claims in the '567 Patent were valid, determined that AFD Petroleum Ltd. [the Defendant, or AFD] had infringed some of these claims, issued injunctive relief, awarded Frac Shack an accounting of profits and compensation for use prior to the date the '567 Patent was issued, and remitted to the parties the calculation of these amounts. I also awarded Frac Shack interest and costs, both remitted to the parties for calculation.

[3] In a Supplemental Judgment (*Frac Shack Inc v AFD Petroleum Ltd*, 2017 FC 274), I clarified the accounting method to be used when calculating profits, and fixed the sums payable on account of profits and for use as \$221,786.00 and \$126,037.00, respectively.

[4] In a subsequent Costs Order (unreported Order made in *Frac Shack Inc v AFD Petroleum Ltd*, March 3, 2017, in file T-2149-14), I fixed Frac Shack's costs in the all-inclusive amount of \$163,760.00.

[5] The FCA held that I made a palpable and overriding error in defining the person skilled in the art [the POSITA] and what that person's common general knowledge was at the relevant date, finding an inconsistency between paragraphs 142, 144 and 154 of my decision. In light of this error, the FCA remitted the issues of identification of the POSITA and the extent of the POSITA's knowledge in respect of fuel delivery system design back to me for reconsideration, as well as issues related to obviousness, construction of the terms "automatically operable valve", "automatic fuel delivery" and "fuel cap", infringement, and all remedial issues flowing therefrom, to be considered in accordance with the reasons of the FCA. Paragraphs 2 to 7 of the Trial Judgment, paragraph 2 of the Supplemental Judgment and the Costs Order were set aside.

II. Issues

[6] The FCA's decision has placed the following issues before this Court:

- A. Does the nature and degree of the POSITA's knowledge regarding design of fuel systems used in fracturing operations, as part of the POSITA's common general knowledge, affect the Court's decision on claim construction?
- B. What impact, if any, does the POSITA's common general knowledge, including knowledge of the design of fuel systems, have on the Trial Judgment's determinations with respect to obviousness?
- C. In light of the reconsideration of the POSITA and that person's common general knowledge, what impact, if any, does the revised claim construction have on infringement and remedies?

[7] I have carefully considered the reasons of the FCA and have had the benefit of the parties' written submissions on the issues for reconsideration.

III. Analysis

- A. *Does the nature and degree of the POSITA's knowledge regarding design of fuel systems used in fracturing operations, as part of the POSITA's common general knowledge, affect the Court's decision on claim construction?*

[8] At paragraph 142 of the Trial Judgment, I decided that the POSITA to whom the '567 Patent is directed "would have some experience designing fueling equipment for the applications covered by the '567 Parent, namely refueling equipment used in fracturing operations at a well

site”. However, I did not expressly mention this experience in describing the attributes of the POSITA and the POSITA’s common general knowledge at paragraphs 144 and 154 of the Trial Judgment. The FCA found this omission to be a contradiction which disclosed a palpable and overriding error.

[9] At paragraph 142, I held that:

I agree with Mr. Matiasz and Mr. Smith that a POSITA would be an individual with an understanding of the hazards associated with refueling fracturing equipment. However, there is no evidence to support their claim that a POSITA must have experience actually refueling fracturing equipment. I disagree with Mr. Matiasz that any experience with designing fracturing equipment will suffice. The ‘567 Patent is directed to a fuel delivery system; therefore, a POSITA would have some experience designing fueling equipment for the applications covered by the ‘567 Patent, namely refueling equipment used in fracturing operations at a well site.

[Emphasis mine]

[10] At paragraph 144 of the Trial Judgment I decided:

Having considered all the evidence before the Court, I find that a POSITA, in the context of the ‘567 Patent, would:

- a. have a post-secondary degree in engineering or a similar degree, and some practical experience with fracturing operations, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment; or
- b. have no formal degree, but significant (five to ten or more years) experience in the oil and gas industry, and specific experience with the operation and refueling of fracturing equipment, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment.

[Emphasis mine]

[11] In my conclusions regarding the POSITA's common general knowledge, at paragraph 154 of the Trial Judgment, I decided:

Based upon the evidence given by the fact witnesses and the expert witnesses, the common general knowledge at the relevant date for the '567 Patent would have included:

- a. general knowledge of fracturing operations, and the fracturing pad environment;
- b. knowledge of the hazards associated with fueling, particularly the hazards associated with manual hot refueling systems;
- c. general knowledge about Class II fuels; and
- d. knowledge of regulatory requirements associated with transporting and supplying fuel at temporary fueling installations.

[12] As a preliminary observation, an Appeal Court must read all relevant portions of the Trial Court's reasons holistically and with an open mind, before that Court can conclude that a lower Court failed to take into account the common general knowledge available to the POSITA (*Bombardier Recreational Products Inc v Arctic Cat, Inc et al*, 2018 FCA 172 at para 69).

[13] To conflate the issues of who the POSITA is and what that notional person would know as common knowledge at the relevant date is mistaken – while interrelated, they involve different criteria, and Courts should be cognizant of and strive to apply a contextual and purposive analysis of these issues.

[14] While perhaps not implicit in the impugned paragraphs 144 & 154 of my earlier decision, I was certainly aware of the requisite criteria of the POSITA, including knowledge with respect

to fuel delivery design, in considering the common general knowledge of that person at the relevant date and in my subsequent analysis of both claim construction and obviousness.

[15] The Plaintiff submits that what is required in this redetermination is that the POSITA as originally defined be supplemented with additional details of the POSITA's design experience in relation to fracturing and the related common general knowledge; to the extent that wasn't explicit or implicit in my decision at trial, that is true.

[16] The Plaintiff proposes that paragraph 144 of the Trial Judgment be supplemented as follows (proposed amendments shown with underline):

...a POSITA, in the context of the '567 Patent, would:

a. have a post-secondary degree in engineering or a similar degree, and some practical experience with fracturing operations and designing fuel systems for refueling equipment used in fracturing operations at a well site, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment and knowledge of the basic principles of designing fuel systems for refueling equipment used in fracturing operations at a well site; or

b. have no formal degree, but significant (five to ten or more years) experience in the oil and gas industry, including the design of fuelling systems for refueling equipment used in fracturing operations at a well site, and specific experience with the operation and refueling of fracturing equipment, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment and knowledge of the basic principles of designing fuel systems for refueling equipment used in fracturing operations at a well site.

[17] The Plaintiff proposes that paragraph 154 of the Trial Judgment be supplemented as follows (proposed amendments shown with underline):

...the common general knowledge at the relevant date for the '567 Patent would have included:

- a. general knowledge of fracturing operations, and the fracturing pad environment;
- b. knowledge of the hazards associated with fueling, particularly the hazards associated with manual hot refueling systems;
- c. general knowledge about Class II fuels;
- d. knowledge of regulatory requirements associated with transporting and supplying fuel at temporary fueling installations; and
- e. experience in designing fueling equipment for the types of applications covered by the '567 Patent, namely refueling equipment used in fracturing operations at a well site, including the ability to select and install appropriate components such as pumps, hoses and fittings, and would understand the fundamentals of fluid flow.

[18] The Defendant argues that the POSITA should be a team comprising a person with skill and experience in designing of fueling systems [the Fuel Person], and a person with some exposure to the surface operations at a frac site and the hazards associated with fueling fracturing equipment [the Frac Person].

[19] The Fuel Person would have the following education and experience:

- a. a post-secondary degree in engineering, with courses on fluid flow and dynamics, and about four years of experience in designing fuel storage and dispensing systems; or

b. no formal degree, but at least 5-10 years of experience in designing fuel storage and dispensing systems.

[20] The Frac Person would have the education and experience set out in paragraph 144 of the Trial Judgment.

[21] The Defendant submits that the common general knowledge of the POSITA in respect of fuel delivery system design would include:

a. knowledge of common fuel dispensing systems, and common components for such systems;

b. knowledge of applicable codes or regulations;

c. knowledge of the properties of various types of fuel, in particular Class II fuels, and issues of compatibility between fuel and fuel system components;

d. knowledge of how to design a fuel delivery system, including common design approaches, how to choose appropriate components and how to design the layout of the system;

e. knowledge of multipoint fueling systems such as those at retail service stations and aviation facilities and those used for generator systems and the design process for a system that will fuel multiple fuel tanks or pieces of equipment at one time.

[22] This construction urged by the Defendant is overly broad, ignores the key importance of experience in fracturing operations, and is not in any way purposive of a proper construction.

[23] The FCA did not overturn any of the factual conclusions in the Trial Judgment, other than finding fault with language omitted from paragraphs 144 and 154, and the conclusions that directly flowed from those omissions.

[24] While I implicitly adopted the Plaintiff's approach in my initial decision, to avoid any ambiguity, I explicitly find that a POSITA, in the context of the '567 Patent, would:

- a. have a post-secondary degree in engineering or a similar degree, and some practical experience with fracturing operations and designing fuel systems for refueling equipment used in fracturing operations at a well site, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment and knowledge of the basic principles of designing fuel systems for refueling equipment used in fracturing operations at a well site; or
- b. have no formal degree, but significant (five to ten or more years) experience in the oil and gas industry, including the design of fuelling systems for refuelling equipment used in fracturing operations at a well site, and specific experience with the operation and refueling of fracturing equipment, such that he or she had a clear understanding of the hazards associated with fueling and refueling fracturing equipment and knowledge of the basic principles of designing fuel systems for refueling equipment used in fracturing operations at a well site.

[Amendments underlined]

[25] The common general knowledge of the POSITA includes:

- a. general knowledge of fracturing operations, and the fracturing pad environment;
- b. knowledge of the hazards associated with fueling, particularly the hazards associated with manual hot refueling systems;
- c. general knowledge about Class II fuels;
- d. knowledge of regulatory requirements associated with transporting and supplying fuel at temporary fueling installations; and
- e. experience in designing fueling equipment for the types of applications covered by the '567 Patent, namely refueling equipment used in fracturing operations at a well site.

[Amendments underlined]

[26] The FCA also returned the construction of the terms “automatically operable valves”, “automatic fuel delivery”, and “fuel cap” to this Court for redetermination, as the POSITA’s knowledge of fuel system design may affect how the POSITA understands these terms.

[27] In the Trial Judgment, the term “automatically operable valves” was construed as “any valve that is operated remotely via an electric signal”. “Automatic fuel delivery” was similarly construed as “fuel delivery that does not require an operator to stand at a fuel tank with the fuel hose – i.e., manually refuel in the hot zone of a fracturing site – and can be delivered by remote control of automatic valves that control fuel flow via hoses attached to the equipment tanks.”

[28] In this redetermination, the parties disagree as to whether the terms “automatic” and “automatically” refer to operation without human intervention generally, or more narrowly to operation without physical human intervention at the location of the valve.

[29] The Defendant argues that “automatic” or “automatically” refers to operation without human intervention at all, suggesting that an “automatic fuel delivery” system is one in which there is no need for an operator to start and stop the flow of fuel to each equipment tank.

[30] The Defendant further argues that the POSITA would consider an “automatic fuel delivery” system to be a normal, common and well understood industry term, meaning a system “designed to operate without any need for a person to start or stop the flow of fuel in the system.” The Defendant submits that there is nothing in the language of the ‘567 Patent that supports differing from this accepted meaning.

[31] In particular, the Defendant highlights that at paragraph 15, the '567 Patent distinguishes between automatic and manual operation of the refuelling unit, both of which do not involve an operator in the hot zone:

In an embodiment with automatically operating valves 58, the control station 56 may comprise a conventional computer, input device (keyboard) and display or displays. In a manual embodiment, the operator may be provided with a valve control console with individual toggles for remote operation of the valves 58, and the valve control console, or another console, may include visual representation or displays showing the fuel level in each of the tanks 12.

[Emphasis added in Defendant's submissions]

[32] The Defendant also notes several other paragraphs in the '567 Patent which they allege support this distinction between automatic and manual operation of the refuelling unit.

[33] The Plaintiff argues that "automatic" or "automatically" should be interpreted as referencing the operation of a valve that does not require a person to physically operate the valve by hand.

[34] The Plaintiff notes that it was established at trial, and not overturned on appeal, that the state of the art was manual hot refuelling. Accordingly, the POSITA would understand "automatic" and "automatically" in the context of manual hot refuelling. In other words, "manual" would be understood as something done physically at the location in question by hand, whereas "automatic" or "automatically" would be understood as not requiring a person to physically operate the valve by hand.

[35] I reviewed the expert testimony on this issue and the language in the '567 Patent. The amended definition of the POSITA and the POSITA's common general knowledge does not alter the conclusion that the POSITA would understand "automatic" as referencing operation without human intervention at the location of the valve. "Automatically operable valves" should be construed as "any valve that is operated remotely via an electric signal". Similarly, "automatic fuel delivery" should be construed as "fuel delivery that does not require an operator to stand at a fuel tank with the fuel hose – i.e., manually refuel in the hot zone of a fracturing site – and can be delivered by remote control of automatic valves that control fuel flow via hoses attached to the equipment tanks."

[36] Having considered the POSITA's knowledge of fuel system design, nothing changes my purposive construction of "automatically operable valves" or "automatic fuel delivery", and I continue to be of the view that such a construction favours the Plaintiff's experts' views, as stated at paragraphs 167 to 169 of the Trial Judgment.

[37] With respect to construction of "fuel cap", at trial, I reviewed the expert testimony and the language of the '567 Patent before concluding at paragraph 180:

Reading the '567 Patent as a whole, with a mind willing to understand, and in light of the expert testimony, I do not find that the fuel cap must seal to the equipment fuel tank to prevent spills. I find that the term "fuel cap" describes any device that is by some means anchored or secured to the throat of an equipment fuel tank, through which fuel is delivered, and which limits contaminants from entering the tank and prevents fuel spills, under normal operation, through securing the hoses to the equipment tank and positioning the fuel level sensor.

[38] I canvassed the expert testimony as well as the language of the '567 Patent in arriving at the conclusion that the fuel cap need not seal to the equipment fuel tank in order to prevent spills. The Defendant has not raised any arguments which convince me that this conclusion should be altered due to the POSITA's knowledge and experience designing fuel systems for refueling equipment used in fracturing operations at a well site. As such, I maintain the definition of "fuel cap" as decided in the Trial Judgment.

[39] Contrary to AFD's position, its fuel cap and the claimed fuel cap in the '567 Patent prevent spills in the same way. Neither fuel cap has a fool-proof air-tight seal, and both prevent spills by ensuring that the hose does not fall out of the tank and by providing a mechanism to attached the fuel sensor to the tank in order to detect when the tank is approaching full.

B. *What impact, if any, does the POSITA's common general knowledge, including knowledge of the design of fuel systems, have on the Trial Judgment's determinations with respect to obviousness?*

[40] The FCA also remitted the issue of obviousness, reasoning that the attributes of the POSITA and the POSITA's common general knowledge are key components in the obviousness analysis. Under the obviousness analysis, an invention claimed in a patent will be void for obviousness if it adds nothing to the common general knowledge of the POSITA or was obvious to try in light of such common general knowledge.

[41] As outlined at paragraphs 204-205 of the Trial Judgment:

[204] Obviousness must be assessed on a claim-by-claim basis (*Zero Spill Systems (International) Inc v Heide*, 2015 FCA 115 at para 85). The four-part *Windsurfing-Pozzoli* test for obviousness

was set down by the Supreme Court of Canada in *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 [*Sanofi*] at paragraph 67:

1. (a) Identify the notional person skilled in the art.

(b) Identify the relevant common general knowledge of that person.
2. Identify the inventive concept of the claim in question or if that cannot be readily done, construe it.
3. Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed.
4. Viewed without any knowledge of the alleged invention as claimed, do those differences constitute items which would have been obvious to the person skilled in the art or do they require a degree of invention?

[205] Obviousness is a difficult test to meet, and where an expert is hired for the purpose of testifying a court must be wary of his or her hindsight bias (*Bridgeview Manufacturing Inc v 931409 Alberta Ltd (Central Alberta Hay Centre)*, 2010 FCA 188 at para 50 [*Bridgeview*]). It is not fair to a person claiming to have invented a combination invention to break it down into its constituent parts and find that, because the parts are well known, the combination is obvious (*Bridgeview*, above, at para 51). The question to be asked is would a POSITA, in the light of the state of the art and the common general knowledge, at the claimed date of the invention, have come directly and without difficulty to the invention in the patent (*Beloit Canada Ltd v Valmet Oy* (1986), 8 CPR (3d) 289 at 294).

[42] The FCA indicated at paragraph 47 of their decision that I should bear in mind that the obviousness inquiry should be undertaken on a claim-by-claim basis – it should be apparent that I did so. Moreover, it is trite law that if an independent claim is found not to be obvious, then dependent claims therefrom cannot be obvious. In contrast, if an independent claim is held to be

obvious, then the Court must go to consider each dependent claim for obviousness, as each such claim adds an element or elements that may or may not be obvious in light of the relevant prior art and/or common general knowledge of the POSITA at the relevant date.

[43] The Defendant concedes that claims 7-9, 10 (as dependent on 7-9), 15, 19, 27-31 (as dependent on 7-10, 15, or 19) and 38 are not invalid for obviousness.

[44] What remains in dispute is whether the subject matter of claims 11-13 of the '567 Patent were obvious to the POSITA, as of the claim date of February 16, 2010.

[45] Claims 11-13 are as follows:

11. A method of fuel delivery of fuel to selected fuel tanks of equipment at a well site during fracturing of a well, the method comprising:

pumping fuel from a fuel source through hoses in parallel to each of the fuel tanks;

controlling fluid flow through each hose independently of flow in other hoses; and

automatically controlling fluid flow in each hose in response to receiving signals representative of fuel levels in the fuel tanks.

12. The method of claim 11 further comprising starting fluid flow to each fuel tank of the selected fuel tanks upon receiving a low fuel level signal related to the respective fuel tank and stopping fluid flow to each fuel tank upon receiving a high level signal related to the respective fuel tank.

13. The method of claim 11 or 12 further comprising preventing spills at each fuel tank by providing fuel flow to each fuel tank through a fuel cap on the fuel tank.

[46] As a preliminary issue to the obviousness analysis, the Defendant raises two recent decisions released since the Trial Judgment, which they argue modify the *Windsurfing-Pozzoli* test.

[47] First, the Defendant raises the case of *AstraZeneca Canada Inc v Apotex Inc*, 2017 SCC 36, where at paragraph 31 the Supreme Court of Canada reiterated that “[g]enerally, an analysis regarding issues of validity, such as novelty or non-obviousness, focuses on the claims alone, and only considers the disclosure where there is ambiguity in the claims.”

[48] Next, the Defendant highlights passages from *Ciba Specialty Chemicals Water Treatments Limited v SNF Inc*, 2017 FCA 225 [*Ciba*], and argues that they alter steps 2, 3, and 4 of the *Windsurfing-Pozzoli* test.

[49] In relation to step 2, the FCA in *Ciba* stated at paragraph 77:

There may be cases in which the inventive concept can be grasped without difficulty but it appears to me that because “inventive concept” remains undefined, the search for it has brought considerable confusion into the law of obviousness. That uncertainty can be reduced by simply avoiding the inventive concept altogether and pursuing the alternate course of construing the claim. Until such time as the Supreme Court is able to develop a workable definition of the inventive concept, that appears to me to be a more useful use of the parties’ and the Federal Court’s time than arguing about a distraction or engaging in an unnecessary satellite debate.

[Emphasis added by Defendant]

[50] In relation to step 3, the FCA stated at paragraph 60:

To conclude, a word about “the matter cited as forming part of the prior art”, the phrase used in *Pozzoli* and *Plavix*. The matter cited as forming part of the prior art is simply the prior art relied upon by the person alleging obviousness. Obviousness is not determined by reference to the prior art at large. The person alleging obviousness must point to one or more elements of prior art which make the impugned invention obvious. The choice of those elements of prior art is entirely in the hands of the party alleging obviousness...

[51] In relation to step 4, the FCA stated at paragraph 92:

The next step in the analysis, step 4, is to determine if these differences could be bridged by the skilled person using only their common general knowledge and those elements of the prior art which that person could find by conducting a reasonably diligent search.

[52] With respect to step 2, the FCA’s comments are recognition of the difficulties that a court may face when attempting to identify the inventive concept of a claim. They do not suggest that the proper approach is to bypass this analysis as a matter of course and proceed directly to construing the claim.

[53] As directed by the Supreme Court of Canada in *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 at paragraph 67 (quoting *Pozzoli SPA v BDMO SA*, [2007] EWCA Civ 588 at para 23):

In the result I would restate the *Windsurfing* questions thus:

(1)(a) Identify the notional "person skilled in the art";

(b) Identify the relevant common general knowledge of that person;

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

[54] With respect to step 3, the Defendant suggests that *Ciba* altered the *Windsurfing-Pozzoli* test so that establishing the state of the prior art is entirely in the hands of the person alleging obviousness. In fact, the FCA was clarifying that once the state of the prior art is established, it is one or more elements of that prior art, rather than the prior art at large, which may render a claim obvious. While it is the responsibility of the person alleging obviousness to point to those specific elements of the prior art, this does not give them free rein to define the state of the prior art.

[55] With respect to step 4, the FCA was again clarifying, at paragraph 92, that it is not the prior art at large that is relevant, but rather those elements of the prior art which the POSITA could find by conducting a reasonably diligent search.

[56] Nothing in those two decisions changes the fact that the correct approach is to adopt the *Windsurfing-Pozzoli* test, as outlined at paragraph 204 of the Trial Judgment.

[57] At paragraph 248 of the Trial Judgment, I concluded based on the testimony of factual witnesses, all of whom were working in the fracturing industry in some capacity in 2010, that the

state of the prior art before the '567 invention was manual hot refueling. The expert testimony of the Defendant was not at all persuasive, as Mr. Berry had no experience in fracturing operations.

[58] Claim 11 includes the limitation of automatically controlling fluid flow in each hose in response to receiving signals representative of the fuel levels in the fuel tanks, and this is one of the differences between the state of the art and the claim as construed.

[59] Moreover, Mr. Matiasz, one of Plaintiff's expert witnesses at trial, identified that automatic fuel control via a sensor in the fuel tank, so that the system can fuel multiple tanks at the same time independently and thereby improve efficiency, was an inventive aspect of the '567 Patent not found in the prior art.

[60] Further, even when given the problem to solve, the Defendant's expert, Mr. Berry, was unable to arrive at the solution described in claim 11.

[61] Claim 11 is not obvious in view of the prior art, nor would it be based on the common general knowledge of the POSITA at the relevant date. Claims 12 and 13, which are dependent on claim 11, are also not obvious.

[62] I do not accept the Defendant's contention that they have free rein to define the state of the prior art, and I see no reason to depart from my finding at trial that the state of the prior art was manual refuelling.

[63] Any additional knowledge possessed by the POSITA in respect of fuel equipment design does not materially alter my decision on the obviousness of claims 11-13.

C. *In light of the reconsideration of the POSITA and that person's common general knowledge, what impact, if any, does the revised claim construction have on infringement and remedies?*

[64] Given the analysis above, the conclusions on infringement reached at paragraphs 277-280 of the Trial Judgment are unchanged. Similarly, there are no amendments necessary to the calculation of remedies in the Trial Judgment.

[65] Accordingly, the issues are answered as follows:

- A. Does the nature and degree of the POSITA's knowledge regarding design of fuel systems used in fracturing operations, as part of the POSITA's common general knowledge, affect the Court's decision on claim construction? - NO
- B. What impact, if any, does the POSITA's common general knowledge, including knowledge of the design of fuel systems, have on the Trial Judgment's determinations with respect to obviousness? - NONE
- C. In light of the reconsideration of the POSITA and that person's common general knowledge, what impact, if any, does the revised claim construction have on infringement and remedies? - NONE

JUDGMENT in T-2149-14

THIS COURT'S JUDGMENT is that:

1. The Trial Judgment, the Supplemental Judgment and the Costs Orders are maintained;
2. Given that the Federal Court of Appeal ordered this reconsideration, no costs are awarded.

"Michael D. Manson"

Judge

FEDERAL COURT
SOLICITORS OF RECORD

DOCKET: T-2149-14

STYLE OF CAUSE: FRAC SHACK INC ET AL v AFD PETROLEUM LTD.

**SUBMISSIONS ON RE-DETERMINATION CONSIDERED AT OTTAWA,
ONTARIO PURSUANT TO THE FEDERAL COURT OF APPEAL'S JUDGMENT
IN A-63-17, A-97-17 AND A-103-17**

JUDGMENT AND REASONS: MANSON J.

DATED: OCTOBER 19, 2018

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