

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA
INDIANAPOLIS DIVISION

IN RE: METHOD OF PROCESSING)
ETHANOL BYPRODUCTS AND)
RELATED SUBSYSTEMS ('858) PATENT) No. 1:10-mi-02181-LJM-DML
LITIGATION)
)
RELATED TO ALL CASES)

SUPPLEMENTAL ORDER ON CLAIM CONSTRUCTION

This Multi-District Litigation began with respect to one patent, U.S. Patent No. 7,601,858 (the "858 patent"). Since September 29, 2011, the date the Court issued its Order on Claim Construction with respect to the disputed claims of the '858 patent, patentees, GS CleanTech Corporation and GreenShift Corporation (collectively, "CleanTech"), have asserted three additional patents in the '858 patent family against the allegedly infringing Defendants, U.S. Patent Nos., 8,008,516 (the "516 patent"), 8,008,517 (the "517 patent") and 8,283,484 (the "484 patent") (the '858, '516, '517 and '484 patents, collectively, the "858 patent family"). The patents in the '858 patent family share an identical specification and have substantially similar claim terms.

Currently pending before the Court are motions for summary judgment of non-infringement of, alternatively or collectively, the '858, '516 and/or '517 patents, filed by Defendants Big River Resources Galva, LLC ("Big River"); Big River Resources West Burlington, LLC ("West Burlington"); Cardinal Ethanol, LLC ("Cardinal"); ICM, Inc. ("ICM"); LincolnLand Agri-Energy, LLC ("LincolnLand"); David J. Vander Griend ("Vander Griend"); Iroquois Bio-Energy Co., LLC ("Iroquois"); Al-Corn Clean Fuel ("Al-Corn"); Blue Flint Ethanol, LLC ("Blue Flint"); ACE Ethanol, LLC ("ACE"); Lincolnway

Energy, LLC (“Lincolnway”); United Wisconsin Grain Producers, LLC (“UWGP”); Bushmills Ethanol, Inc. (“Bushmills”); Chippewa Valley Ethanol Co. (“CVEC”); and Heartland Corn Products (“Heartland”) (all motions, collectively, “Defendants’ Non-Infringement Motions”). Also currently pending before the Court are CleanTech’s motions for summary judgment of infringement of the ‘858 and the ‘516 patents against Cardinal, Lincolnway, Blue Flint, UWGP, AI-Corn, Bushmills, CVEC, Heartland, Iroquois, ACE, LincolnLand, Galva, West Burlington and Adkins Energy, LLC (“Adkins”) (these Defendants, collectively, the “Ethanol Plant Defendants”).

The parties’ briefs on summary judgment raise the issue of the proper construction for the term “substantially free of oil,” a term introduced during construction of the disputed terms of the ‘858 patent, and the term “substantially oil free,” which is a limitation in one claim of the ‘516 patent and one claim of the ‘484 patent. In reviewing the parties’ arguments on summary judgment as well as the Court’s Order on Claim Construction (Dkt. No. 169¹), and Order on Motion for Clarification (Dkt. No. 214), it became apparent that when the Court construed the terms “heating and mechanically processing the concentrate/concentrated byproduct/concentrated thin stillage to separate the oil from the concentrate/concentrated byproduct/concentrated thin stillage” as it appears in claims 1, 10 and 16 and the related term “centrifuging the concentrate to recover oil” as it appears in claim 8 of the ‘858 patent, the Court did not consider CleanTech’s arguments that the term did not require the syrup stream leaving the oil recovery step to be “substantially free of oil.” See Dkt. No. 169, at 20 (“Plaintiffs do not argue against Defendants’ assertion that the syrup stream leaving the oil recover step is substantially free of oil.”); Dkt. No. 214, at 1 (“In its Claim Construction Order, the Court

¹ All references to Docket Nos. in this Order are to the Master Docket, 1:10-mi-2181-LJM-DML.

concluded that the syrup stream leaving the oil recovery step is “substantially free of oil” in each of the dependent claims. See Dkt. No. 169 at 20.”). During the claim construction hearing, in its response to the Non-Adkins Defendants’² request for clarification, in response to Defendants’ Non-Infringement Motions, and in its own motions for summary judgment, CleanTech argued that the “substantially free of oil” limitation should not apply to any of the independent claims of the ‘858 patent. See, e.g., Dkt. No. 179, Claim Constr. Hr’g Tr. at 34-37 (arguing that the terms do not require that the exiting syrup be substantially free of oil); Dkt. No. 199, at 1-5 (same); Dkt. No. 464, at 13 n.2 (same). However, CleanTech offered a construction for the term “substantially oil free” as it appears in the ‘516 patent. See, e.g., Dkt. No. 464, at 14-16. Further, the parties’ briefing of the summary judgment motions highlight that additional clarification of the scope of any “substantially free of oil” limitation is necessary.

In addition, in their responses to CleanTech’s motions for summary judgment, the Ethanol Plant Defendants re-assert their argument that the Court must further define the “substantially oil” claim limitation by delineating a percentage against which Defendants may measure their respective systems before any infringement determination is made. See, e.g., Dkt. No. 688, at 8-9; see also Dkt. No. 692, at 2.

After assessing the parties’ summary judgment arguments, the Court also considered the terms in the ‘517 and ‘484 patents and concluded that no other limitations in these patents needed construction. See Dkt. No.745, at 1. The Court then provided all parties the opportunity to raise disputed terms and to brief arguments regarding those terms; no party raised an issue. See, generally, Dkt. Nos. 770 & 771.

² Adkins did not join the other Defendants in arguing that the post-processing syrup was substantially free of oil.

For these reasons, the Court readdresses the proper construction for the terms “heating and mechanically processing the concentrate/concentrated byproduct/concentrated thin stillage to separate the oil from the concentrate/concentrated byproduct/concentrated thin stillage,” “centrifuging the concentrate to recover oil,” and “disc [sic] stack centrifuging oil from the thin stillage concentrate to form a substantially oil free concentrate.”

The Court presumes familiarity with the technology of the ‘858 patent family as set forth in its Order on Claim Construction. Dkt. No. 169, at 2-3.

I. THE CLAIMS OF THE ‘858 PATENT FAMILY

Clean-Tech accuses all Defendants’ methods of infringing independent claims 1, 8, 10, and 16, and dependent claims 3, 5, 13, and 14 of the ‘858 patent. The Court will focus on the independent claims because all of the disputed terms appear therein. The asserted independent claims read:

1. A method of recovering oil from thin stillage, the method comprising, in sequence: evaporating the thin stillage to remove water and form a concentrated byproduct; and recovering oil from the concentrated byproduct by heating and mechanically processing the concentrated byproduct to separate the oil from the concentrated byproduct, wherein the concentrated byproduct has a moisture content of greater than 30% and less than 90% by weight.

8. A method of recovering oil from thin stillage, comprising, in sequence: evaporating the thin stillage to create a concentrate having a moisture content of greater than 30% by weight and less than about 90% by weight; and centrifuging the concentrate to recover oil.

10. A method of processing whole stillage, comprising: recovering thin stillage from the whole stillage, the thin stillage including oil and solids; concentrating the thin stillage including the solids to produce a thin stillage

concentrate, wherein the thin stillage concentrate has a moisture content of greater than 30% and less than 90% by weight; and recovering oil from the concentrate by a process consisting essentially of heating and mechanically processing the concentrate to separate the oil from the concentrate.

16. In a method for processing corn to produce ethanol and concentrated thin stillage, the improvement comprising the step of recovering a product consisting essentially of oil from the concentrated thin stillage by heating and mechanically processing the concentrated thin stillage to separate the oil from the concentrated thin stillage.

'858 Patent, col.5 l.66 to col.6 l.64.

According to CleanTech's motions for summary judgment, CleanTech accuses the Ethanol Plant Defendants' methods of infringing at least independent claims 1 and 7 of the '516 patent. See Dkt. No. 464, at 14-16; Dkt. No. 469, at 12-14; Dkt. No. 474, at 13-15; Dkt. No. 479, at 14-16; Dkt. No. 485, at 13-15; Dkt. No. 490, at 16-18; Dkt. No. 495, at 14-16; Dkt. No. 500, at 12-14; Dkt. No. 505, at 13-15; Dkt. No. 510, at 23-25; Dkt. No. 515, at 14-16; Dkt. No. 520, at 13-15; Dkt. No. 525, at 12-14 & Dkt. No. 530, at 13-15. Again, all disputed terms appear in the independent claims and the Court will focus on those. The asserted independent claims read:

1. A method of recovering oil from thin stillage; the method consisting essentially of, in sequence:

evaporating water from the thin stillage to form a thin stillage concentrate, wherein the thin stillage concentrate has a moisture content of greater than 30% and less than 90% by weight before the recovering step;

mechanically processing the thin stillage concentrate to separate oil from the thin stillage concentrate; and

recovering the separated oil.

* * *

7. A method of processing whole stillage, comprising, in sequence:

separating distiller wet grains and thin stillage from the whole stillage, the thin stillage including oil and solids;

concentrating the thin stillage including the solids to form a concentrate having a moisture content of greater than 30% and less than 90% by weight; and

disc [sic] stack centrifuging oil from the thin stillage concentrate to form a substantially oil free concentrate.

'516 Patent, col.6, l.11 to col. 6, l52.

Lincolnway, Blue Flint, UWGP, Bushmills, CVEC, Heartland and ACE (collectively, the "517 Moving Defendants") have moved for summary judgment of non-infringement of the '517 patent, while CleanTech has moved for summary judgment as to the '517 patent against all of the Ethanol Plant Defendants. The asserted independent claim of the '517 patent reads:

1. A method of recovering oil from thin stillage, comprising: evaporating the thin stillage to create a concentrate having a moisture content of greater than 15% by weight and less than about 90% by weight; and centrifuging the concentrate to recover oil.

The newly-asserted patent-in-suit, the'484 patent, is a child of the '858 patent and has the same specification as that of the '858, '516 and '517 patents. The '484 patent has five independent claims that read:

1. A method of recovering oil from thin stillage; the method consisting essentially of, in sequence:

evaporating water from the thin stillage to form a thin stillage concentrate, wherein the thin stillage concentrate has a moisture content of greater than 30% and less than 90% by weight before recovering step;

mechanically processing the thin stillage concentrate to separate oil from the thin stillage concentrate;

recovering separated oil; and

drying the thin stillage concentrate to reduce the moisture content in the thin stillage concentrate.

* * *

8. A method of processing whole stillage, comprising, in sequence:

separating distiller wet grains and thin stillage from the whole stillage, the thin stillage including oil and solids;

concentrating the thin stillage including the solids to form a thin stillage concentrate having a moisture content of greater than 30% and less than 90% by weight;

disc [sic] stack centrifuging oil from the thin stillage concentrate to form a substantially oil free concentrate; and

drying the thin stillage concentrate to reduce the moisture content in the thin stillage concentrate.

* * *

16. A method of recovering oil from thin stillage, comprising, in sequence:

evaporating the thin stillage to create a thin stillage concentrate having a moisture content of greater than 30% by weight and less than about 90% by weight;

centrifuging the thin stillage concentrate to recover oil; and

drying the thin stillage concentrate to reduce a moisture content in the thin stillage concentrate.

* * *

19. A method of recovering oil from thin stillage, the method comprising, in sequence:

evaporating the thin stillage to remove water and form a concentrated byproduct, wherein the concentrated byproduct has a moisture content of greater than 30% and less than 90% by weight;

recovering oil from the concentrated byproduct by heating and mechanically processing the byproduct to separate the oil from the concentrated byproduct; and

drying the concentrated byproduct to reduce the moisture content in the concentrated byproduct.

* * *

30. A method of recovering oil from thin stillage; the method comprising

evaporating water from the thin stillage to form a thin stillage concentrate, wherein the thin stillage concentrate has a moisture content of greater than 30% and less than 90% by weight;

mechanically processing the thin stillage concentrate to separate oil from the thin stillage concentrate; and

recovering the separated oil.

'484 Patent, col.6, l. 9 to col.8, l.37.

The parties agree that construction of the claims of the '858 patent is applicable to the claim construction of both the '516 and '517 patents because the "same term or phrase should be interpreted consistently where it appears in claims of common ancestry." Dkt. No. 566, CleanTech's Surreply, at 18 (citing *Warrior Lacrosse, Inc. v. STX, LLC*, No. 04-70363, 2005 WL 1378752, at *13-14 (E.D. Mich. June 2, 2005)). See also Dkt. No. 458, Defendants' (except Adkins) Reply, at 13 (citing *Omega Eng'g, Inc. v. Raytech Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003)). The Court concludes that the construction of the '858 patent applies to all of the asserted claims in the '516, '517 and '484 patents because no party has presented a compelling reason not to do so. See *Z4 Techs., Inc. v. Microsoft Corp.*, 507 F.3d 1340, 1348 (Fed. Cir. 2007) (citing *Omega Eng'g*, 334. F3d at 1334).

II. THE “SUBSTANTIALLY OIL FREE” LIMITATION

A. The Limitation Is Not Required In All Of The Claims

After close consideration of the ‘858 patent family, the prosecution history of the ‘858 patent, the parties’ arguments at the claim construction hearing as well as the parties’ briefs on clarification and summary judgment, the Court concludes that the ‘858 patent discloses, but does not require that the post-oil recovery step syrup stream be “substantially free of oil.” The Court starts with the language of the claims themselves. See *Z4 Techs.*, 507 F.3d at 1348 (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)). None of the claims of the ‘858 patent require that the post-oil recovery step syrup stream be substantially free of oil. See, generally, ‘858 Patent, col.5, l.65 to col.6, l.64. In fact, in the entire ‘858 patent family, the term “substantially oil free concentrate” appears only in claim 7 of the ‘516 patent and the substantially similar claim 8 of the ‘484 patent. See ‘516 Patent, col.6, l.42; ‘484 Patent, col.6, l.47.

Further, there is one reference to this phrase in the specification, but it is almost an afterthought. The specification recites that in one example of the invention, “[r]ecombining the syrup (which is substantially free of oil) from the centrifuge 14 with the distillers wet grains,” can result in further efficiencies upon drying. ‘858 Patent, col.4, l.54. There is no reference to the phrase in any recitation of the multiple embodiments and/or aspects of the invention in the remainder of the specification. *Id.* col.2, l.23 to col.3, l.28. See also *id.* col.5, l.7 to col.5, l.63 (describing “EXAMPLE 2” and Figures 3 and 4). These findings point away from inclusion of the limitation in the claims of the ‘858 patent, or similar claims in the ‘516, ‘517 and ‘484 patents, because the primary focus of the invention was elsewhere – namely, on the recovery of oil.

However, as the Defendants, except Adkins, pointed out during the claim construction hearing, in response to a U.S. Patent and Trademark Office (“USPTO”) rejection over, *inter alia*, prior art U.S. Patent Application Ser. No. 2004/0087808 to Prevost (“Prevost”), the patentees disclose formation of a “substantially oil free concentrate” through centrifugation as an alternative difference between Prevost and the ‘858 patented invention. Dkt. No. 52-5, USPTO Prosecution History for U.S. Patent No. 7,601,858 (“858 Pros. His.”), at 128. Specifically, the patentees stated:

It is clear that Prevost fails to teach or suggest a post evaporation process for recovering oil from a thin stillage concentrate that includes, *inter alia*, mechanically processing the thin stillage concentrate to separate oil from the thin stillage concentrate (Claim 1) or disc [sic] stack centrifuging oil [sic] to form a substantially oil free concentrate (Claim 43 [sic]). Prevost is fairly explicit in its teaching of a solvent extraction process for removing oil from the thin stillage syrup obtained following evaporation as set forth below.

An oil removal step can be performed on either the thin stillage before evaporation or on the syrup after evaporation. ***If performed*** prior to evaporation, an oil removal process such as centrifugation is preferred whereas ***after evaporation a solvent extraction process is preferred to extract at least a portion of the oil from the syrup.***

(Prevost, paragraph 14, emphasis added).

A solvent extraction process is not the same as mechanically processing the thin stillage concentrate to separate oil from the thin stillage concentrate or disc [sic] stack centrifuging oil [sic] to form a substantially oil free concentrate as claimed. In Prevost’s solvent extraction process, the thin stillage concentrate (obtained after evaporation) is contacted by batch, semi-batch, or continuously with a solvent so as to extract oil therefrom. Applicants have carefully studied Prevost and can find no teaching or suggestion of a post evaporation process for recovering oil from the concentrated byproduct by mechanically processing as in claim 31 [sic] or by disc stack centrifuging as in claim 43 [sic]. Prevost’s solvent extraction process is detailed in paragraphs 26-29.

Id. (all emphasis in original). The Defendants contend that the statement “as claimed” in the underlined portion of the second explanation is a clear disavowal of claim scope as to all claims of the ‘858 patent and requires the concentrate or syrup after the oil recovery step to be substantially free of oil. The Court disagrees.

First, the phrase Defendants rely upon in these passages as written, “centrifuging oil to form a substantially oil free concentrate,” does not appear in any of the claims in the ‘858 patent family. Instead, the claims refer to processing thin-stillage concentrate or processing oil from thin-stillage concentrate. *See, generally*, ‘858 Patent, col.5, l.64 to col.6, l.64; ‘516 Patent, col.6, ll.11-52; ‘517 Patent, col. 6, ll.32-39; ‘484 Patent, col.6, l.9 to col. 8, l.37. On their face, then, these statements are irrelevant to the claims of the ‘858 patent family. If the Court presumes that the patentees intended for these statements to refer to the language of the claims, then it must conclude that they are referring to the language of claim 7 of the ‘516 patent and claim 8 of the ‘484 patent, which contain substantially similar language, but with the addition of “from the thin stillage concentrate” as occurred during the prosecution of the ‘516 Patent. *See* Dkt. No. 403-4, at 3 (amending claim 43 to include the language “from the thin stillage concentrate” to the disk stack centrifuging step); ‘516 Patent, col.6, ll.41-42 (stating “disc [sic] stack centrifuging oil from the thin stillage concentrate to form a substantially oil free concentrate”); ‘484 Patent, col.6, ll.46-47 (same). Whatever the reason for the error in the statements in the prosecution history, the Court cannot conclude that these references limit all the claims of the ‘858 Patent or the other claims that do not specifically include the limitation in the remaining patents in the family.

Both of the patentee's statements repeat their prior statements to the patent examiner about the differences between the '858 claimed invention and Prevost: post-evaporation recovery of oil through mechanical process or centrifuging rather than through solvent extraction. See, e.g. *id.* at 104 (distinguishing Prevost on the grounds that the prior art does not teach a post-evaporation of heating and mechanically processing or centrifuging); *id.* at 124-25 (distinguishing Minowa, et al., Nat'l Inst. For Resources & Env't, Ibaraki, 1993, in light of Prevost on similar grounds). These are stated in the alternative and, although the Defendants argued that mechanical processing as claimed in the '858 patent should be limited to centrifuging, the Court disagreed and will not re-address that argument here.

In addition, the second statement by the patentees is merely a restatement of the first, which specifically references exemplary claims, claim 1 and claim 43. As CleanTech pointed out at the claim construction hearing, see Dkt. No. 179, at 34-36, there was no claim 43 before the patent examiner associated with the '858 patent. See, generally, Dkt. No. 52-5, at 1-285. Furthermore, in response to the USPTO's office action rejecting the '516 patent claims, the inventors made the same arguments, but in one paragraph referenced claim 31, instead of claim 1, but always referring to claim 43 with respect to the latter phrase. See Dkt. No. 403-4, at 6 & 9-10. Whether the reference to claim 43 in the '858 Patent prosecution history is a typographical error, sloppiness or negligence, any disavowal of claim scope, if any, was only as to claim 43, which specifically requires the post-recovery syrup to be "substantially oil free." Later in the same paragraph the patentees highlight that Prevost does not teach or suggest a post-evaporation process for recovering oil and never even mention the formation of a

substantially oil free concentrate. Dkt. No. 52-5, at 128. Moreover, adding the limitation of “substantially oil free” to claims that do not even mention the term, like claims 1, 8, 10 and 16 of the ‘858 patent, would eviscerate the broader ground upon which the patentees were distinguishing Prevost as to both the ‘858 and ‘516 patents – post-evaporation recovery of oil.

Finally, the patentees continually pointed out to the examiner that the concentration of the thin stillage as required by all of the claims in the ‘858 patent family free up bound oil. See Dkt. No. 52-5, at 127 (stating that creation of a thin stillage concentrate “is a critical feature because it is believed that the formation of the thin stillage concentrate by evaporation frees some of the bound oil within the thin stillage”). This distinguishing feature is even more important in combination with the other fact pointed to by the patentees about the Prevost application: it teaches away from centrifugation for stillage of any type with a moisture content above 15%. See Dkt. No. 52-5, at 127 (describing Prevost’s requirement for less than 15% water for oil recovery); see *also* Dkt. No. 12-3, Prevost, at ¶ 14 (teaching that if an oil removal step is used for the thin stillage “prior to evaporation, an oil removal process such as centrifugation is preferred whereas after evaporation a solvent extraction process is preferred to extract at least a portion of the oil from the syrup”); *id.* at Claim 19 (requiring evaporation of the thin stillage to produce a syrup stream containing less than 15% water by weight before oil is removed). Unless there is heating of the thin stillage concentrate during the oil recovery step (which is not taught by Prevost), no claims in the ‘858 patent family require a moisture level in the thin stillage concentrate below 30%. See Dkt. No. 52-5, at 124 (describing the requirements of the claimed invention of the ‘858 patent); see,

generally, '858 Patent, Claims; '516 Patent, Claims; '517 Patent Claims; '484 Patent Claims.

For these reasons, the Court concludes that only claim 7 of the '516 patent and claim 8 of the '484 patent require that the post-oil recovery step syrup stream be "substantially oil free."

B. The Scope Of The "Substantially Oil Free" Limitation

This determination does not end the Court's inquiry regarding this limitation, however, because CleanTech has now asserted the '516 and '484 patents against all Defendants, and because the parties' summary judgment briefs raise issues regarding the scope of the term. The Defendants argue that "substantially oil free concentrate" must be construed to require "a comparison between the oil concentration in the incoming thin stillage stream and the outgoing remaining-concentrate stream" because of "the cause-and-effect terminology in the patent claims." Dkt. No. 688, at 13. Defendants also contend that they argued in their claim construction briefs that oil recovery percentage was the proper method for determining if the post-recovery syrup stream was substantially free of oil and CleanTech cannot now assert otherwise because it did not offer an alternative construction in its claim construction briefs. See Dkt. Nos. 349, at 16 & 394, at 24-25. Defendants further assert that CleanTech has acknowledged the appropriateness of the input/output comparison methodology in its Supplemental Answers to Al-Corn Clean Fuel's Second Set of Interrogatories ("CleanTech's Supp. Al-Corn Ans."). Dkt. No. 394, at 21, ¶ 68. The Defendants also argue that the patents-in-suit themselves disclose only one way to determine whether the post-oil recovery thin stillage stream is "substantially oil free" and, quantitatively, it

may contain only 5% or less of the oil in the incoming stream. See Dkt. Nos. 349, at 16-19 & 394, at 4-5 & 24-27. Specifically, Provisional Application No. 60/602050 (the “Provisional”), incorporated by reference into all of the patents in the ‘858 patent family, distinctly references Example 1 as “based on actual experimental data” and states in Figure 2 that the patented process recovers “the majority of the oil,” which equated to “95% recovery.” Dkt. No. 349, at 350-1, at 4, ll.16-17 & Fig. 2. In other words, only 5% of the oil in the incoming concentrated thin stillage remains in the post-recovery syrup, which must set the boundary for “substantially free of oil.” Lastly, Defendants contend that the prosecution history supports their construction. Dkt. No. 458, at 6, 11-13, 21-22.

CleanTech argues that there is nothing in the claim language, the Court’s prior claim construction orders, the specification or the prosecution history that requires a particular recovery rate of oil. See, e.g., Dkt. No. 419, at 2, 4, 24 & 26-29;³ Dkt. No. 566, at 6-10.⁴ In addition, CleanTech avers that Defendants’ reliance on the results set forth in Figure 2 improperly limits any interpretation of “substantially oil free” to the results obtained with a preferred embodiment, which the Court has already determined is improper. *Id.* at 27-28. Similarly, CleanTech states that the Defendants’ reliance on the claim construction briefing or CleanTech’s Supp. Al-Corn Ans. as evidence that CleanTech agrees with them is also improper. *Id.* at 39-40. Moreover, CleanTech asserts that the proper construction for the scope of the “substantially oil free” limitation

³ For ease of reference, the Court is citing to CleanTech’s Opposition to Motions for Summary Judgment of NonInfringement by ACE, Al-Corn, Blue Flint, Bushmills, CVEC, Heartland, Lincolnway and UWGP; however, the arguments presented therein are substantively identical to the arguments in CleanTech’s opposition to Motions for Summary Judgment of NonInfringement by ICM, Vander Griend, Cardinal, West Burlington, Galva and LincolnLand. Compare Dkt. No. 419 with Dkt. No. 410.

⁴ The portion of CleanTech’s Surreply cited here is not the subject of the Moving Defendants’ Motion to Strike (Dkt. No. 652) and by such reference the Court makes no determination at this time on the merits of Defendants’ Motion to Strike.

compares the oil concentrations of the two streams exiting the mechanical separation device. *Id.* at 29-30.

The Court concludes that, in the context of the '858 patent family, the term "substantially oil free" has an ordinary meaning of largely or mostly oil free, but is measured by a comparison of the oil concentration in the incoming thin stillage and the oil concentration in the resulting syrup. With respect to the absolute percentages advocated by the Defendants', the Court concludes that the argument improperly seeks to import limitations from the specification into the claims. First, the Defendants cannot point to any language in the claims, the specification or the prosecution history that limit the substantially oil free limitation to the quantities listed in Figure 2 of the '858 patent family. There simply is none. The claims, as recited above, are completely devoid of any reference to numerical quantities. Further, references in the specification to the content of oil in the post-recovery syrup stream are equally vague. For example, describing Figure 2, the specification reads: "centrifuge **14** . . . produces syrup having a moisture content of 82.5% by weight, but with far less oil in view of the preceding recovery step. Recombining the syrup (which is substantially free of oil) from the centrifuge **14** . . .;" '516 Patent, col.4, ll.50-53; and "removal of the majority of the oil before the drying step makes the process more efficient." *Id.* col.4, ll.63-65. Similarly, there is no numerical reference for the content of oil in the post-recovery syrup stream by the patentees in the prosecution history, and the Defendants could not point to any. *See, generally*, Dkt. Nos. 52-5 (Prosecution History for '858 Patent); 403-4 (Office Action Response for '516 Patent); 458 (Defendants' Reply).

In addition, there is no suggestion in the prosecution history that the claims were rejected based on the patentees' failure to claim a specific amount of oil that remained in the post-recovery step syrup. Figure 2, as set forth in either the Provisional or the '858 patent family specifications, does contain representative quantities; however, there is no reason to import those quantities into the claims because the patentees did not use them as a way to distinguish the patented invention from any prior art reference. Like the '858 patent family, Prevost does not specify the amount of oil recovered from the thin stillage. See Dkt. No. 120-3, Prevost, at 6 (claims 19-23). Therefore, it is unclear how the patentee's assertions that the '858 and '516 patented inventions are different could require the "substantially oil free" term to be limited to 5% or less oil. As the Court stated in its Order on Claim Construction with respect to the "oil" limitation, "Figure 2 does not limit the claims to its terms explicitly. The cases are clear that the Court may not limit claims to preferred embodiments," and it will not do so with respect to the "substantially oil free" limitation. Dkt. No. 169, at 21-22 (citing *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009)).

Defendants also argue that the principles that led to a numerical limit for the "substantially free" limitation in the patent-in-suit in, for example, *Johns Hopkins University v. Cellpro, Inc.*, necessitate the same result here. 152 F.3d 1342, 1354-56 (Fed. Cir. 1998). In *Johns Hopkins*, the patent examiner had rejected the claims based on the undefined scope of the "substantially free" limitation, which referred to the purity of a suspension created by the disclosed technique. *Id.* at 1354. The patentees responded claiming that the limitation should have its ordinary meaning of "no appreciable number" and referred to the measurement techniques available in the art at

the time of the invention, which allowed for as much as 10% contaminant. *Id.* at 1354-55. However, the *Johns Hopkins* patent-in-suit contained a table of results, using the state-of-the-art measurement techniques, which showed the only embodiment of the invention and disclosed the highest possible purity (90%). *Id.* at 1355. The Federal Circuit affirmed the district court's conclusion that the table set the outer boundary of the purity because an ordinary meaning alternative, as suggested by the patentees, would exclude the preferred embodiment. *Id.* at 1355 (citing *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed. Cir. 1988); *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1219 (Fed. Cir. 1995); *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996)). The *Johns Hopkins* court repeated that “[a] claim construction that does not encompass a disclosed embodiment is thus ‘rarely, if ever, correct and would require highly persuasive evidentiary support.’” *Id.* (quoting *Vitronics*, 90 F.3d at 1583).

With respect to the '858 patent family, there is no suggestion in the '858 Patent prosecution history, the '516 Patent prosecution history, or the patents themselves that the ordinary meaning of the term “substantially oil free concentrate” would exclude the preferred embodiment. The references in the specification state, alternatively, “removing at least a portion of the oil from the concentrate,” '858 Patent, col.3, ll.23-24; “centrifuge **14** ... produces syrup having a moisture content of 82.5%, but with far less oil in view of the preceding recovery step,” *id.* col.4, ll.52-53; “[r]ecombining the syrup (which is substantially free of oil) from the centrifuge **14**,” *id.* col.4., ll.54-55; “removal of the majority of the oil before the drying step,” *id.* col.4, ll.63-64; and “the syrup recovered from the centrifuge may be evaporated and processed again in a further

effort to recover oil,” *id.* col.5, ll.46-48. See *a/so* Dkt. No. 350-1, Provisional, at Figure 2 (stating that the patentees recovered the “majority of the oil” or a “95% recovery” in the preferred embodiment). The most limiting language is “removal of the majority of the oil,” which only restates the term “substantially oil free” and adds no further illumination. But there is no need for any further illumination because these passages, and even the nearly identical disclosures in the Provisional, point to the ordinary meaning and there is no evidence of a rejection of the ‘858 patent family of claims based on indefiniteness of the substantially oil free limitation.

Turning to the parties’ arguments regarding whether the term “substantially oil free concentrate” requires measurement by a comparison of the oil in the incoming thin stillage concentrate with that in the post-recovery step syrup (as proposed by the Defendants) or a comparison of the oil in the two post-recovery step streams (as proposed by CleanTech), the Court concludes that the claim language and the specification support the Defendants’ construction. As the Defendants point out, the relevant claims are written in cause and effect language because they require the substantially oil free concentrate be “form[ed]” by the oil recovery step. ‘516 Patent, col.6, ll.41-42; ‘484 Patent, col.6, ll.46-47. Specifically, the relevant step requires: “disc [sic] stack centrifuging oil from the thin stillage concentrate to form a substantially oil free concentrate.” *Id.* The emphasis in this claim language is on what is created or formed by the thin stillage concentrate through the oil recovery step – a substantially oil free concentrate – therefore, the relevant measurement is a comparison of the oil in the thin stillage going into the centrifuge and the oil in the syrup produced by the process.

This construction is supported further in the specification. In the description of the preferred embodiment in Figure 2, the specification states that “centrifuge 14 . . . produces syrup having a moisture content of 82.5% by weight, but with far less oil in view of the preceding recovery step.” ‘516 Patent, col.4, ll.50-53. This statement specifically teaches that the outgoing syrup stream is “substantially oil free” when it has “far less oil in view of the preceding recovery step,” which can only mean that to practice the disclosed method requires production of a syrup stream largely free of oil when compared to the incoming thin stillage stream. A later reference with respect to Figure 2 suggests the same comparison when it discloses that the recovery step removes the majority of the oil from the thin stillage to make the further processing of the outgoing syrup more efficient. ‘516 Patent, col.4, ll.63-65 (“removal of the majority of the oil before the drying step makes the process more efficient”). Again, this disclosure highlights that the starting point for determining whether the exiting syrup is substantially oil free is the oil concentration in the thin stillage going into the centrifuge.

For all of these reasons, the Court concludes that the “substantially oil free” limitation in claim 7 of the ‘516 Patent and claim 8 of the ‘484 Patent means the syrup exiting the centrifuge is substantially oil free compared to the incoming thin stillage, where substantially has its ordinary meaning of largely or mostly.

III. THE “OIL” LIMITATION

As discussed at length by the Court in its Order on Claim Construction, the Defendants argued that the specification and prosecution history of the ‘858 patent require that the oil recovered from the patented process is without water and solids. See Dkt. No. 169, at 20-23; see *also* Dkt. No. 179, at 85-97. The Court rejected the

Defendants' arguments and concluded that the post-mechanically processed oil stream is "substantially oil." See Dkt. No. 169, at 23. In response to CleanTech's motions for summary judgment, the Ethanol Plant Defendants, excluding Adkins, assert that further construction of the scope of "substantially oil" is necessary for a trier of fact to determine if their processes infringe the '858 patent family and, in conjunction with their argument that the substantially oil free limitation should require 5% or less oil in the post-recovery step syrup, imply that the "substantially oil" limitation should mean that the oil recovered must be nearly pure oil, or at least 95% or more of the oil in the incoming thin stillage. See Dkt. Nos. 688, at 8-9; 692, at 1-8. Citing multiple cases regarding the requirements of 35 U.S.C. § 112 ¶ 2, which requires a patentee to particularly point out and distinctly claim the subject matter that the inventors regard as their invention, Cardinal specifically argues that the Court should clarify the precise parameters a "substantially oil" stream and that the patent specification and the prosecution history support a conclusion that "the degree of variance from 100% oil should be very narrow, e.g., trace amounts of contaminants." Dkt. No. 692, at 2-8.

With respect to their argument that the Court must delineate a specific percentage of oil in the post-recovery step oil stream, the Defendants, repeat their original claim construction arguments, which were rejected by the Court in its Order on Claim Construction. Dkt. No. 169, at 20-23. The Court declines to readdress those arguments here, however, it will address the Defendants' reliance on *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818 (Fed. Cir. 1984). The Defendants cite this case for the proposition that the Court must determine whether the patent specification provides some standard for measuring words of degree such as

“substantially” when the patent or prosecution history suggests one. See, e.g., Dkt. No. 692, at 6. From there, the Defendants reason that the specification only discloses the recovery rates in Figure 2, therefore, the patentees must have meant for those numbers to define the purity of the oil recovered. See, e.g., *id.* at 7-8.

In the Court’s view, *Seattle Box* merely confirms that the Court’s construction of the term oil to mean “substantially oil” with its ordinary meaning of largely or mostly, the contours of which is a factual issue, is the correct one. In *Seattle Box*, the Federal Circuit affirmed the lower court’s determination that neither the specification nor the prosecution history of the patent-in-suit in that case required that the term “substantially equal to” be made more definite for the patent to be valid. 731 F.2d at 826. Then, with respect to infringement, the *Seattle Box* court stated that “the trier of fact must determine the scope of an imprecise phrase such as ‘substantially equal to,’ which by its very nature, has a fact-dependent meaning.” *Id.* at 829. The Federal Circuit taught that since the claims issued with a “substantially equal to” limitation, “some leeway is appropriate in determining literal infringement,” but statements made during prosecution may estop a patentee from asserting that the claims have a broad effect under the doctrine of equivalents. *Id.*

With respect to the ‘858 patent family, the only indefiniteness objection raised in the prosecution history of the ‘858 Patent had nothing to do with the elements of the claims that contain the “substantially” language. See Dkt. No. 52-5, at 84 (rejecting Claim 31 under 35 U.S.C. § 112 for omitting steps); *id.* at 112 (withdrawing the objection). To the extent the Defendants seek to use Figure 2 or the patentees’ statements during prosecution to further limit the Court’s “substantially oil” construction

or the “substantially oil free” limitation, the Court declines the invitation. As discussed in the Order on Claim Construction and herein, none of the intrinsic evidence limits the two contested phrases to any particular percentages. Further, the plain meaning of “substantially” in the context in which they are used in the patents or the claim construction of “largely or mostly” adequately conveys both the likely amounts and that the likely range of equivalents in this case is small.

IV. PENDING SUMMARY JUDGMENT MOTIONS

As stated in this Order, the Court has considered the parties’ extensive briefing on the summary judgment motions and utilized the arguments made regarding further claim construction of disputed terms in this Order. However, the Court recognizes that the decisions in this Order will have an impact on the parties’ positions with respect to infringement. In addition, as discussed in the introduction, since the date the parties filed their summary judgment motions the Court has allowed CleanTech to amend its complaints against each Defendant such that nearly all patents in the ‘858 patent family are asserted against each of them. For both of these reasons, the currently-briefed summary judgment motions likely do not address all the arguments the parties wish to raise with respect to CleanTech’s allegations of infringement and, to resolve the infringement issues fairly, the Court will require the parties to address the allegedly infringing processes under the new claim construction. Under these circumstances, the Court concludes that supplemental briefing on infringement will not suffice. Therefore, all pending motions for summary judgment are hereby **DENIED without prejudice** and with leave to re-file them according to the Revised and Amended Order on Case

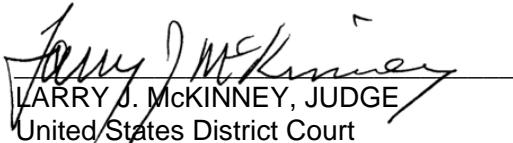
Management, Dkt. No. 780, and the Defendants’, with the exception of Adkins, Motion to Strike, Dkt. No. 652, is **DENIED**.

V. SECOND REVISED CLAIM CONSTRUCTION CHART

For the reasons stated in the Order on Claim Construction dated September 29, 2011, and for the reasons stated herein, the Court construes the disputed terms of the ‘858 patent family as follows:

Claim Term	Construction
“concentrate” / “concentrated byproduct” / “concentrated thin stillage”	“syrup containing water, oil and solids resulting from the concentrating or evaporating process”
“mechanically processing”	“to subject to a mechanical device (or devices) to effect a particular result”
“heating and mechanically processing the concentrate/concentrated byproduct/concentrated thin stillage to separate the oil from the concentrate/concentrated byproduct/concentrated thin stillage”	“the Concentrate Term (as set forth above) subjected to heat and a mechanical device (or devices) to extract a product that is substantially (meaning largely or mostly) oil from the Concentrate Term (as construed above)”
“centrifuging the concentrate to recover oil”	“processing the concentrate (as set forth above) with a centrifuge to separate the oil from the concentrate so that the oil stream coming out of the centrifuge is substantially (meaning largely or mostly) oil”
“substantially oil free concentrate”	“the syrup exiting the centrifuge is largely or mostly oil free compared to the incoming thin stillage”

IT IS SO ORDERED this 29th day of January, 2013.


 LARRY J. MCKINNEY, JUDGE
 United States District Court
 Southern District of Indiana

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