

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMCOL INTERNATIONAL CORP.,

Petitioner,

v.

OIL-DRI CORPORATION OF AMERICA,
Patent Owner.

IPR2022-01107
Patent 11,026,397 B1

Before MICHAEL L. WOODS, RICHARD H. MARSCHALL, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

AMCOL International Corp. (“Petitioner”), filed a Petition requesting *inter partes* review of claims 1–19 (the “challenged claims”) of U.S. Patent No. 11,026,397 B2 (Ex. 1001, “the ’397 patent”). Paper 1 (“Pet.”). Oil-Dri Corporation of America (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 8, “Reply”), and Patent Owner filed a Preliminary Sur-reply (Paper 9, “Sur-reply”).

We have authority to determine whether to institute *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021). *Inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the evidence and arguments in the record, we institute *inter partes* review of the ’397 patent on all challenges set forth in the Petition.

BACKGROUND

A. Related Proceedings

The parties identify the following proceedings involving the ’397 patent or related patents: *Oil-Dri Corporation of America v. AMCOL International Corp.*, No. 1:21-cv-00991 (N.D. Ill.); IPR2022-00206; and IPR2022-00691. Pet. 3–4; Paper 5 (Patent Owner’s Mandatory Notices), 1.

B. The ’397 Patent

The ’397 patent relates to “cat litter products” and, in particular, litter products using “[s]welling clay made of sodium bentonite” and various fillers. Ex. 1001, code (57), 1:40–46. The ’397 patent states that clumping

cat litter products made of sodium bentonite have “the disadvantage of being relatively expensive” (*id.* at 1:40–46), but litter products made of sodium bentonite and fillers retain “substantially the same clumpability properties as a composition consisting of only the sodium bentonite” (*id.* at code (57)). According to the ’397 patent, based on a number of test results set forth in the specification, the key to achieving removably clumpable litter compositions involves including a specific amount of sodium bentonite in the litter blend—a minimum of 47% of the total external surface area of all particles in the litter must originate from the sodium bentonite. *See id.* at 45:41–46:2.

The ’397 patent provides 46 examples of various litter compositions having differing weight percentages of sodium bentonite and non-swelling clay used as fillers, different external surface areas of the components of the composition, and different bulk densities. Ex. 1001, 15:46–46:29. The Examples also provide test data showing the clump strength for each composition. *See id.* In the “Examples 3-49” section, the ’397 patent discusses the preparation of the samples and the calculation method used to determine the external surface area for the various reported compositions. *See id.* at 15:46–16:57.

The ’397 patent describes one method for calculating the external surface area of the litter for the components in the litter compositions. The ’397 patent states that each blend of litter in the examples includes “various particle sizes of sodium bentonite and calcium bentonite clay combined at different ratios based on weight.” Ex. 1001, 16:17–20. The particle sizes are “provided by a supplier or screened using a Sweeco vibrating particle

separator with appropriate screens.” *Id.* at 16:20–22. To calculate the external surface area, each particle is assumed to be “a perfect sphere.” *Id.* at 16:31–33. Using this assumption and the weights captured per sieve, a particle count is determined using “ASTM Standard Test Method E 1520-99” and “multipliers for 4/6, 6/8, 8/10, 6/10 and <100 mesh particles” that “are extrapolated from a power trendline with the $R^2=0.9923$ for the plot of the U.S. mesh size versus ASTM multiplier.” *Id.* at 16:34–38. Next, the external surface area of a single particle for each cut is calculated, which is then multiplied by the number of particles in each cut. *See id.* at 16:41–43. These individual cut external surface areas are then added together to get a cumulative external surface area for that component. *See id.* at 16:44–46. The same calculation is then performed for each component present in the mixture. *See id.* Following these individual calculations, the cumulative external surface areas are added together, and each component’s external surface area is divided by the total to get an external surface area percentage. *See id.* at 16:48–50.

C. Challenged Claims

Petitioner challenges claims 1–19 of the ’397 patent, of which claims 1 and 7 are independent. Independent claim 1 is reproduced below:

1. A litter comprising:

45% to 80% by weight of sodium bentonite, wherein the sodium bentonite comprises at least 47% of an external surface area of the litter, and

20% to 55% by weight of a non-clumping filler material,

wherein the litter has a bulk density less than about 58 lb/ft³,
wherein the litter when exposed to a wetting agent forms at

least one clump, and wherein each at least one clump is mechanically separable from unwetted litter for disposal.

Ex. 1001, 49:56–50:6.

D. Asserted Grounds of Unpatentability

Petitioner challenges claims 1–19 on the following grounds (Pet. 4):

Claims Challenged	35 U.S.C. §	References/Basis
1, 3–8, 10–11, 13–16	102	Goss ¹
2, 9, 12, 17–19	103	Goss

Petitioner supports its challenges with a declaration from Christina M. Borgese. Ex. 1003.

ANALYSIS

A. Legal Standards

Petitioner relies on both anticipation and obviousness in its challenges to the claims of the '397 patent. To anticipate a claim under 35 U.S.C. § 102, “a single prior art reference must expressly or inherently disclose each claim limitation.” *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008). “A prior art reference anticipates a patent’s claim under § 102(b) if it ‘discloses each and every element of the claimed invention arranged or combined in the same way as in the claim.’” *Monsanto Tech. LLC v. E.I. DuPont de Nemours & Co.*, 878 F.3d 1336,

¹ US 5,975,019, issued Nov. 2, 1999 (“Goss,” Ex. 1005).

1342–43 (Fed. Cir. 2018) (quoting *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1341 (Fed. Cir. 2016)).

As to obviousness, a claim is unpatentable as obvious under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

B. The Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *Id.*

Petitioner contends that a person having ordinary skill in the art “would have a bachelor’s degree in chemistry or chemical engineering or an equivalent degree and sufficient work experience in animal litter process development. A bachelor’s degree is not explicitly necessary.” Pet. 4. Petitioner further contends that “[h]ands-on experience in the field of animal litter process development could substitute for possessing a degree if that individual’s experience is in contributing to and/or leading the process development effort rather than following a set of instructions given to them.” *Id.* at 4–5. Petitioner asserts that such a person “should have familiarity with the process of validating relevant test methods and qualifying analysts as well as familiarity with the composition and chemistry of various clays used in animal litter (including sodium bentonite)” and that such a person “would have gained this familiarity through education, training and/or experience.” *Id.*

Patent Owner does not dispute Petitioner’s proposed definition of the level of ordinary skill in the art, which appears consistent with the record, including the prior art. *See* Prelim. Resp. 12; *GPAC Inc.*, 57 F.3d at 1579. We adopt the definition of the level of ordinary skill in the art proposed by Petitioner.

C. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as

would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner proposes constructions for the terms “filler material,” “clump strength,” “clumping agent,” and “wetting agent.” Pet. 17. Patent Owner does not dispute Petitioner’s constructions for these terms, but argues that these constructions are unnecessary to resolve any controversy in this proceeding. Prelim. Resp. 12–13. Based on our review of the current record, we agree with Patent Owner that we need not formally construe any claim terms to determine whether to institute an *inter partes* review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (stating that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Discretion Under 35 U.S.C. § 325(d)

Patent Owner argues that we should exercise discretion to deny institution under 35 U.S.C. § 325(d). *See* Prelim. Resp. 17–22. For the reasons set forth below, under the facts presented and arguments made, we decline to exercise our discretion under 35 U.S.C. § 325(d) to deny instituting trial.

1. Legal Framework

Section 325(d) provides that, in determining whether to institute an *inter partes* review, “the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” The Board uses a two-part framework in determining whether to exercise its discretion under § 325(d): (1) determining whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, determining whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *See Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). If a condition in the first part of the framework is satisfied, and absent a material error, the Director generally will exercise discretion not to institute *inter partes* review. *Id.* at Paper 6 at 8–9.

In applying this framework, we consider several non-exclusive factors, including:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art; (e) whether Petitioner has pointed out sufficiently

how the Examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph). If, after review of factors (a), (b), and (d), we determine that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner demonstrates that the Office erred in a manner material to the patentability of the challenged claims. *Advanced Bionics*, Paper 6 at 10.

2. Discussion

a. *Whether the Same or Substantially the Same art or Arguments Were Presented to the Office*

The parties appear to agree and the record makes clear that Goss was before the Examiner during prosecution. Patent Owner argues that “the Examiner considered the same prior art during original prosecution that the Petition now relies on.” Prelim. Resp. 13. Patent Owner further argues that Goss was presented to the Examiner because Patent Owner identified the reference on an Information Disclosure Statement (“IDS”), and that the Examiner signed the IDS, indicating that the identified references were considered. *Id.* at 15 (citing Ex. 1002, 536, 548). Petitioner does not disagree with Patent Owner that Goss was before the Examiner, and acknowledges that “Goss was one of 100 patent and non-patent references submitted to the Patent Office in an IDS” and that “[t]he examiner cited Goss among 16 other references prior to issuing a notice of allowance.” Pet. 72.

We agree with Patent Owner that Goss was at least considered by the Examiner, even if the Examiner never discussed the references or relied on it in any manner. *See* Ex. 1001, code (56) (listing Goss among the references cited). Under these circumstances, we find the first part of the *Advanced Bionics* satisfied because the prior art before the Examiner and the prior art relied on in the Petition include the same prior art reference.

b. Whether Petitioner Sufficiently Demonstrates that the Office Erred

The parties disagree as to whether Petitioner shows that the Examiner erred in its examination of the '397 patent. Both parties address the issue of error in their initial responses, and with our authorization, both parties filed supplemental briefing on this issue. Petitioner addresses *Becton, Dickinson* factors (c), (e), and (f) as the factors relevant to the second part of the *Advanced Bionics* framework, and argues that the Examiner erred during prosecution. Reply 1–3. Patent Owner disagrees with Petitioner. *See* Sur-reply 2–3. We address the parties' arguments below.

As to factor (c) (the extent that Goss was considered during prosecution), Petitioner argues that the Examiner did not address the merits of Goss or any of the other references cited by the Examiner in the prosecution record. Pet. 72 (citing Ex. 1002, 528–37). Petitioner further notes that “Goss was never the basis of a rejection by the [E]xaminer, and was not substantively discussed during prosecution.” Reply 1–2. Patent Owner in turn argues that “the Examiner (1) reviewed Goss, which was cited in the IDS; (2) cited Goss in the Notice of References Cited; and (3) determined it did not render the claims unpatentable,” and that this “reflects a conscientious, thorough review of prior art made of record.” Prelim. Resp.

17 (citing Ex. 1001, 2; Ex. 1002, 533–34, 536). In the Sur-reply, Patent Owner further argues that the Examiner “found and cited Goss in the Notice of References Cited following the Examiner’s prior art search” and that this evidence shows that “Goss was thoroughly evaluated.” Sur-reply 2.

We find that factor (c) weighs against discretionary denial because the Examiner’s lack of reliance on Goss during prosecution supports Petitioner’s position. Patent Owner correctly points out that Goss was found and cited by the Examiner, but Petitioner correctly notes that the Examiner did not address Goss on the merits. Prelim. Resp. 17; Pet. 72. Goss was one of numerous references submitted to the Patent Office, but like all of those references, Goss was not the subject of a rejection, or discussion in any amount of detail by the Examiner. Here there were no rejections related to Goss or any allegedly similar prior art, nor was the prior art at issue here discussed in any detail by the Examiner. As a result, we have evidence of the Examiner’s minimal consideration of the prior art. Because the Examiner did not expressly evaluate Goss or any allegedly similar prior art during examination, we consider factor (c) as weighing against discretionary denial.

As to factor (e) (whether Petitioner pointed out sufficiently how the Examiner erred), in the Petition, Petitioner points to the “total external surface area” property of the ’397 patent and argues that Goss does not disclose this property verbatim, but that a PHOSITA could calculate this value based on the disclosures from Goss. *See* Pet. 72. In the Reply, Petitioner argues that “Goss discloses litters comprised of commercially available prior art components (Wyo-Ben ‘FS-40’ and Oil-Dri ‘Blue

Mountain (2)'), with properties known" to a person of ordinary skill in the art. Reply 2 (citing Pet. 21–23, 29–30). Petitioner argues that a person of ordinary skill in the art knowledgeable about these components "would recognize Goss discloses the purportedly missing limitations." *Id.* (citing Pet. 43–46). Petitioner also argues that Patent Owner only disputes that Goss lacks two limitations, the external surface area and bulk density, and that these limitations are met by the disclosures of the commercially available products disclosed in Goss, as would be known by a PHOSITA. Reply at 2. Patent Owner disputes these assertions and argues that Petitioner fails to show Examiner error where Goss does not expressly disclose the information relating to external surface area and bulk density. Prelim. Resp. 18–19; Sur-reply 3. Patent Owner further argues that because Goss fails to explicitly disclose the total surface area limitation and the Petition relies on extrinsic evidence as part of its challenge, no error has been shown that satisfies the second prong of *Advanced Bionics*. Sur-reply 3.

Petitioner argues that Goss discloses all of the limitations of claims 1 and 7. Pet. 23–54. As we discuss in detail below, we find Petitioner's arguments as to the merits of its Petition for institution persuasive. Accordingly, Petitioner establishes that the Examiner failed to appreciate the full extent of Goss's disclosure and thus erred in a manner material to patentability, factor (e) counsels against discretionary denial.

As to factor (f) (the extent to which additional evidence warrants reconsideration of the prior art), Petitioner argues that "[t]he Petition presents the expert declaration of Christina Borgese, which was not before the [E]xaminer." Reply 3. Petitioner explains that "Ms. Borgese explains

how a Skilled Artisan would understand Goss, and describes the scope of a Skilled Artisan's knowledge, with support from references that were also not before the examiner." *Id.* Patent Owner acknowledges that Ms. Borgese's Declaration was not before the Examiner, but argues that a declaration by itself does not weigh against exercising discretion to deny institution. Sur-reply 3.

We agree with Petitioner that we have considerably more evidence and facts before us than the Examiner had during prosecution. The Petition contains a lengthy analysis of Goss and its applicability to claims 1 and 7 supported by declarant testimony, none of which were available to the Examiner during prosecution. *See* Pet. 6–70; Ex. 1003; *see also* Prelim. Resp. 18–19 (acknowledging that the Examiner did not consider certain extrinsic evidence relied on in the Petition). On the other hand, the Examiner presumably could have read all of the prior art of record, including Goss, and considered arguments similar to those raised in the Petition and the supporting statements from the declarant, and in that sense the evidence before us is not sufficiently new that this factor weighs strongly for or against denial of institution. We consider factor (f) neutral in this case.

3. Conclusion

Based on our review of the current record, we determine that Petitioner has demonstrated that the Examiner erred in a manner material to the patentability of challenged claims and that the second part of the *Advanced Bionics* framework is not satisfied. Accordingly, we decline to exercise our discretion to deny institution pursuant to 35 U.S.C. § 325(d).

E. Anticipation Based on Goss

Petitioner argues that Goss anticipates claims 1, 3–8, 10–11, and 13–16 of the '397 patent. Pet. 4, 23–63. Patent Owner raises several arguments against this challenge. *See* Prelim. Resp. 19–32. We first provide a brief overview of the prior art, and then address the parties' arguments.

1. Overview of Goss

Goss discloses a “clumping animal litter” containing up to 60% sodium bentonite and a non-swelling clay filler. Ex. 1005, code (57). Patent Owner is the assignee of Goss, and Goss discloses similar compositions as the '397 patent. *See id.* at code (73). For example, Goss not only emphasizes the weight percentages of sodium bentonite and filler material, but also the “judicious selection of particle size distribution” of each material. *Id.* at code (57), 4:64–5:33 (particle size analysis of sodium bentonite). Goss also discloses examples containing sodium bentonite and a non-swelling clay in various mean particle size ratios and various particle size distributions. *Id.* at 6:39–65. For each example, Goss discloses a clump strength rating based on a scale of 1 to 5 after conducting a drop test, with 1 indicating a clump that remained substantially intact after the test. *Id.* at 6:6–38. Several test results show a successful clump strength of 1 or 1.3 at 30 seconds and 24 hours after wetting the litter. *See id.*

Goss discloses 17 sample litter compositions comprised of a clay filler and sodium bentonite. Ex. 1005, 6:44–64. Each litter uses a different composition of a “particulate non-swelling clay material and swelling clay.” *Id.* at 3:10–11. Goss discloses that the particulate non-swelling clay filler materials can include “any of the commonly known clays” and states that

these are “frequently referred to in the trade under designations as Mississippi Grey, Mississippi Tan, Blue Mountain, and Georgia White.” *Id.* at 3:38–39, 4:1–3. Goss further discloses that the “clay constituent of the present compositions is in the form of discrete particles” and “[t]hese particles preferably are rounded in shape.” *Id.* at 4:5–8. The clays in the reported Goss examples “were run through a particle sizing table using screen sizes from 6 mesh to 100 mesh, United States Sieve Series.” *Id.* at 4:13–15. As to the sodium bentonite components, Goss discloses that “[a]n example of a well known swelling clay is sodium bentonite, also called Wyoming bentonite.” *Id.* at 4:50–51. Goss discloses that “[t]he sodium bentonite material used in the embodiments of the present invention was subjected to particle size analyses.” *Id.* at 4:64–66. For each of the samples disclosed, Goss discloses the particle size analysis using sieves of various sizes. *See id.* at 4:11–40, Table I. The analysis includes the sieve analysis of the components, the mean particle size, the ratio of particle sizes, the weight percentage of the components, and the clump strength for the samples. *See id.* at 2:58–63, 4:11–40, 4:64–5:33, 6:39–65, Tables I–III.

2. Discussion

Petitioner argues that Goss discloses each limitation in claims 1, 3–8, 10–11, and 13–16. Pet. 4, 23–63. For each limitation, Petitioner points to specific portions of Goss that support its position, and declarant testimony addressing each limitation. *See id.* (citing Ex. 1003). Patent Owner raises arguments as to the limitations “wherein the sodium bentonite comprises at least 47% of an external surface area of the litter” (found in independent claims 1 and 7) and “wherein the litter has a bulk density less than about 58

lb/ft³” (found in independent claim 1). *See* Prelim. Resp. 19–32. We specifically address these limitations below.

a. “wherein sodium bentonite comprises at least 47% of an external surface area of the litter”

Petitioner argues that Goss meets the limitation requiring sodium bentonite to comprise “at least 47% of an external surface area of the litter” by calculating the external surface area of Goss Sample N. Pet. 28–46. Petitioner states that it follows the “nine-step process” the ’397 patent discloses, which “requires knowledge of three properties of the litter composition: the particle-size distribution, bulk density, and percent by weight.” *Id.* at 28 (citing Ex. 1003 ¶ 104). Petitioner notes that Goss provides the particle-size distribution for the sample components in Tables I and II. *See id.* (citing Ex. 1003 ¶ 105). For the calculation, Petitioner’s declarant converted the “percentage of material passing through” to the “percentage of material retained” to be consistent with the calculation of the ’397 patent. *Id.* at 28–29 (citing Ex. 1003 ¶¶ 77–79, 105).

As to the bulk density of each component in Goss’s Sample N, Petitioner argues that the information was “known to a Skilled Artisan by the effective filing date of the [’]397 Patent” and supports its argument with data sheets demonstrating the bulk density of sodium bentonite FS-40. Pet. 29–30 (citing Ex. 1001, Examples 3–25, 34, 36–43, 9:29–31; Ex. 1003 ¶¶ 82–87, 106; Ex. 1018, 1; Ex. 1024, 1). For the filler-clay material BL(2), Petitioner points to the Blue-Mountain clay bulk densities disclosed in the ’397 patent. *Id.* at 22–23. Petitioner argues that Blue Mountain clay, including BL(2) was mined by Patent Owner in the Blue Mountain region of Mississippi and therefore a PHOSITA would understand that BL(2) has the

same or similar characteristics as the Blue Mountain RVM clay disclosed in the '397 patent. *See id.* (citing Ex. 1003 ¶¶ 84–86). Petitioner further argues that because these clays have “the same or similar characteristics, they would have the same range of potential bulk densities.” *Id.* (citing Ex. 1003 ¶ 87). Petitioner argues that a PHOSITA would be knowledgeable about the bulk densities of the components in Goss Sample N, and would understand that the bulk densities for sodium bentonite FS-40 range from 58–64 lbs/ft³ and the bulk densities for the filler clay material BL(2) range from 35–47 lbs/ft³. Pet. 35 (citing Ex. 1001, Examples 3–25, 34, 36–43, 9:29–31; Ex. 1003 ¶¶ 82–87, 106, 117; Ex. 1018, 1; Ex. 1024, 1).

Finally, as to the percent by weight attributable to each component, Petitioner points to Goss, which states that Sample N uses “50% by weight FS-40 (*sodium bentonite*) and 50% by weight a BL(2) (*non-clumping filler material*).” Pet. 30 (citing Ex. 1003 ¶¶ 101, 106); Ex. 1005, 2:58–62. Petitioner argues that “[o]nce a Skilled Artisan possesses these three pieces of information, he or she can apply the nine-step methodology of the [']397 Patent to determine the percentage of ‘*total external surface area*’ attributable to each of the components in Goss Sample N.” *Id.*

Petitioner acknowledges that the data provided in Goss for particle size data is not the same as the particle size data used in the '397 patent, and attempts to address these differences in several ways. First, Petitioner argues that “the [']397 Patent contains a small amount of additional granularity” including sieve screens at “30, 35 and 40 mesh,” whereas Goss only discloses screens at 30 and 40 mesh. Pet. 30. Petitioner argues that in cases where there is an intermediate mesh size, “a Skilled Artisan would

evenly distribute the sample reported as retained on the 40 mesh screen in Goss between the 40 and 35 mesh screens.” *Id.* at 31 (citing Ex. 1003 ¶ 110). Petitioner argues that one of ordinary skill in the art would do this because this “is the most natural particle size distribution” as the industrial process for generating clays “creates samples with similar amounts of similarly sized particles.” *Id.* (citing Ex. 1003 ¶ 112). Petitioner further argues that other references, including Albright (Exhibit 1020), confirm an even distribution for the particle size distribution. Pet. 33 (citing Ex. 1003 ¶ 115; Ex. 1020, 30).

After distributing the particle sizes evenly according to its above methodology, Petitioner calculates the external surface area of the components for Goss Sample N across the possible ranges of bulk densities for sodium bentonite FS-40 and Blue Mountain clay BL(2). Pet. 35–46. The calculations presented by Petitioner demonstrate that for all bulk densities in the ranges identified above for FS-40 and BL(2), that the sodium bentonite in Goss Sample N comprises over 47% of the external surface area. *Id.* at 43–44. Petitioner argues that the lowest calculated percentage of the external surface area of 61% occurs when FS-40 has a bulk density of 65 lb/ft³ and BL(2) has a bulk density of 35 lb/ft³. *Id.* Petitioner further argues that even without the assumptions relating to distributing the particle sizes evenly across the mesh sizes for the sieves and using the bulk densities which maximize BL(2) in the calculation, the sodium bentonite would still be at least 50% of the external surface area of the mixture. *Id.* at 45–46.

Patent Owner argues that Petitioner’s analysis lacks support because none of the prior art references expressly discloses the total surface area of

sodium bentonite and that Petitioner’s reliance on the weight percent of sodium bentonite fails to establish the surface area of that component. *See* Prelim. Resp. 19–32. As a result, Patent Owner argues that Petitioner fails to demonstrate that Goss discloses a litter wherein the sodium bentonite comprises at least 47% of an external surface area of the litter. *See id.* First, Patent Owner argues that “Petitioner does not cite to any portion of Goss that expressly discloses” the 47% external surface area limitation. *Id.* at 20. Second, Patent Owner argues that Petitioner fails to show that Goss meets the external surface area inherently. *Id.* at 20–30. Patent Owner notes that Petitioner acknowledges that to calculate the external surface area one needs “knowledge of three properties of the litter composition: (1) particle-size distribution, (2) bulk density, and (3) percent by weight attributable to each component in the composition.” *Id.* at 21 (citing Pet. 28). Patent Owner argues that Goss fails to disclose these three components and therefore any argument Petitioner makes are “based on mere probabilities and not the certainty required to show that a limitation is inherently taught by a reference.” *Id.* at 22. Patent Owner raises several arguments in support of its lack of inherency argument, which we address in turn. *See id.* at 22–30.

First, Patent Owner argues that the technical data sheets Petitioner relies upon, which show the bulk density for FS-40, are inadmissible hearsay and unauthenticated. *Id.* at 22–23. Petitioner argues that the FS-40 Information Sheets dated 1999 and 2002, were both publicly available. Pet. 21 (citing Ex. 1003 ¶ 82; Ex. 1018 (Information Sheet dated 1999); Ex. 1024 (Information Sheet dated 2002)). Petitioner argues that because Goss refers to FS-40 as manufactured by Wyo-Ben, Inc., and Wyo-Ben, Inc. provides

the Information Sheets in the same time frame as Goss's disclosure, one of ordinary skill in the art would understand that Goss's FS-40 sodium bentonite and FS-40 disclosed in the Information Sheet dated 1999 "describe the same (or similar) FS-40" composition. *Id.* at 21–22 (citing Ex. 1003 ¶ 83). The Petition supports its assertions for the public availability of the data sheets with the Declaration of Nathaniel Frank-White (Ex. 1027), a Records Request Processor at the Internet Archive, which offers a service called the Wayback Machine.² Mr. Frank-White testifies that Exhibits A and B attached to his Declaration "are true and accurate copies of screenshots of the Internet Archive's records of the archived files for the URLs and the dates specified in the attached coversheet of each printout." *Id.* ¶ 6. Exhibits A and B include screen shots of archived Technical Data Sheets for Wyoming Bentonite including Exhibit 1018, indicated by the Internet Archive records as scraped from the Internet on May 19, 2005. Petitioner has sufficiently demonstrated, based on the current record, that at least Exhibit 1018 was available as of May 2005, and readily available to a PHOSITA either directly from the manufacturer or through the manufacturer's publicly available webpage. We view Patent Owner's allegations of hearsay and lack of authenticity as best addressed after

² The Wayback Machine is a service provided by the Internet Archive for searching and viewing archived digital internet web pages. Ex. 1027 ¶¶ 2–3. Mr. Nathaniel Frank-White, a Records Request Processor for the Internet Archive, explains that "[t]he archived data made viewable and browsable by the Wayback Machine is obtained by use of web archiving software that automatically stores copies of files available via the Internet, each file preserved as it existed at a particular point in time." *Id.* ¶ 4.

Petitioner has an opportunity to respond during trial, if Patent Owner continues to raise these arguments.

Second, Patent Owner argues that Petitioner has failed to establish that the FS-40 sodium bentonite in Goss Sample N is the same as the FS-40 sodium bentonite in the Technical Information Sheets. Prelim. Resp. 23. Patent Owner correctly notes that the Technical Information Sheets that Petitioner relies on for the bulk density of FS-40 come from different years than Goss and the data sheets have different properties including the sieve data from that reported for FS-40 in Goss. *Id.* at 23–24. Patent Owner argues that because the particle size distributions for the data sheets are different than the particle sizes in Goss, then the bulk density from the data sheets cannot be applied to Goss. *Id.* Patent Owner further argues that “the two Technical Information Sheets have *different* bulk density values for FS-40 despite both having the same particle size distribution.” *Id.* at 25. As Patent Owner notes, Petitioner and Petitioner’s declarant directly address this issue. *Id.* at 24–25. Petitioner argues that the difference in the particle size data would have a minimal impact on the bulk density. Pet. 68, n.5. Petitioner’s arguments and supporting evidence establish sufficiently that Goss’s references to FS-40 are similar enough to the data in the Information Sheets that Petitioner could reasonably use that data in its calculations. During trial, the parties can further address whether any differences would have a minimal impact on those calculations as Petitioner argues, or a more significant impact, as Patent Owner argues.

Third, Patent Owner argues that the Technical Data Sheets do not disclose how the reported bulk density was measured. Prelim. Resp. 27.

Patent Owner argues that the calculations in the '397 patent utilize a specific bulk density method known as the "Loose-Fill (O'Haus) Method." *Id.* (citing Ex. 1001, 12:64–13:42). Patent Owner also argues that there are other methods to calculate bulk density including a method disclosed in House (Exhibit 1012). *Id.* at 27–28. Patent Owner's arguments assume that the '397 patent requires a specific method for determining bulk density. However, Patent Owner has not presented a construction of bulk density requiring a specific method, nor has Patent Owner presented a construction of external surface area that requires the use of a specific bulk density. The claims of the '397 patent do not specify that the bulk densities claimed require a specific method, and Patent Owner's current arguments are unsupported by a declarant. Based on the current record, Petitioner provides adequate argument and evidence to support the use of the bulk densities used in its calculations.

Finally, Patent Owner argues that Petitioner does not have evidence to support the bulk density for filler clay in Goss. *See* Prelim. Resp. 28–30. Specifically, Patent Owner argues that Petitioner's assumption that the clay disclosed in Goss Sample N (BL(2)) has similar properties to the Blue Mountain RVM clay in the '397 patent is flawed. *See id.* Patent Owner argues that Petitioner does not provide evidence that the two clays "came from the same mine, that both were processed in the same way, or that both would necessarily have the same properties" and that these facts matter in determining the bulk density. *See id.* at 29. Patent Owner's arguments do not identify specific deficiencies in Petitioner's calculations, nor does Patent Owner support its argument that BL(2) and RVM have different properties

with evidence showing these differences, such as testimony from one of ordinary skill in the art. On the current record, including unrebutted declarant testimony on this factual issue, we find Petitioner's arguments as to the similar properties for BL(2) and RVM to be persuasive.

Accordingly, we find that Petitioner has demonstrated that Goss Sample N meets the limitation requiring sodium bentonite to comprise "at least 47% of an external surface area of the litter." Much of the disagreement between the parties are related to the calculation assumptions made by Petitioner. At this stage in the proceeding, Petitioner's arguments and unrebutted declarant testimony are consistent with the record and evidence we have before us. Petitioner demonstrates that at the time of the '397 patent, a PHOSITA would have been able to calculate the external surface area of the samples disclosed in Goss using the methodology of the '397 patent.³ Using this methodology and the evidence currently before us, Petitioner persuasively argues that Goss Sample N meets the limitation for the external surface area of sodium bentonite. Patent Owner makes numerous assertions as to what Goss and the '397 patent teach and the knowledge of one of ordinary skill in the art. *See* Prelim. Resp. 23–30. On

³ The parties appear to assume that in order to meet the claimed "at least 47% of an external surface area" limitation, Petitioner must apply the same multi-step approach the '397 patent discloses. *See* Pet. 6–16 (referring to nine-step equation described in the '397 patent specification), 28–46. We need not determine at this time whether the limitation, properly construed, requires that specific process because, based on the current record, Petitioner establishes adequately that Goss discloses the limitation even if the limitation requires using the specific approach set forth in the '397 patent specification.

the current record, those assertions are mere attorney argument, and do not undermine Petitioner's arguments, which are supported by declarant testimony from one of ordinary skill in the art. *See* Pet. 28–46 (citing Ex. 1003). Although we determine that Petitioner makes an adequate showing as to its interpretations of the references based on the current record, we have not made any final determinations on these issues and will not do so until we review the full record at the conclusion of the trial.

b. “wherein the litter has a bulk density less than about 58 lb/ft³”

Petitioner argues that at least Goss's Sample N has a bulk density “less than about 58 lb/ft³.” Pet. 48–50. Petitioner argues that Goss Sample N consists of 50% by weight FS-40 and 50% by weight BL(2). *Id.* at 48. Petitioner also argues that FS-40 “has, conservatively, a bulk density between 55–65 lbs/ft³” as explained by their declarant and supported by contemporaneous data sheets for FS-40. *Id.* at 48 (citing Ex. 1003 ¶¶ 82–83, 106, 117). As to the clay component, BL(2), Petitioner argues that it “has a bulk density range of 35–47 lbs/ft³.” *Id.* (citing Ex. 1003 ¶¶ 84–87, 106, 117). Using these ranges, Petitioner argues, with un rebutted declarant support, that “a Skilled Artisan can generally estimate the bulk density of the composition as a whole.” *Id.* at 49 (citing Ex. 1003 ¶ 130). Petitioner further bolsters its argument by providing a calculation for the possible ranges of bulk densities of the individual components present in Goss's Sample N and calculates that at the highest range of bulk densities for both components (67 lb/ft³ for FS-40 and 47 lb/ft³ for BL(2)) the resulting composition would have a bulk density of 56 lb/ft³. *Id.* at 49–50. Petitioner further calculates that if the smaller particles in the composition, FS-40,

made up an additional 20% of a given sample, the bulk density is 57.8 lb/ft³, which is still less than the claimed 58 lb/ft³. *Id.* at 50.

Patent Owner argues that Petitioner fails to demonstrate that Goss Sample N has a bulk density less than about 58 lb/ft³. Prelim. Resp. 31–32. Patent Owner argues that Petitioner’s calculations are flawed for several reasons. First, Patent Owner argues that Petitioner’s arguments are merely estimates of the bulk density. *Id.* at 31. Patent Owner argues that the bulk densities for the individual components in Petitioner’s calculations are not reliable, leading to flaws in any calculation derived from these estimates. *Id.* Second, Patent Owner argues that Petitioner’s declarant stated that “when materials of different particle size distributions are combined, a new bulk density, that is ***not necessarily*** the average of the bulk densities of the individual components results.” *Id.* (quoting Ex. 1003 ¶ 131). Third, Patent Owner argues that Petitioner assumes for its bulk density calculations that the particles are perfect spheres, which lacks support in the ’397 patent. *Id.* at 32. Finally, Patent Owner argues that Petitioner’s adjustment of the values by 20% for the components highlights the unreliability of Petitioner’s calculations. *Id.*

Patent Owner’s arguments do not undermine Petitioner’s arguments, on the current record, for several reasons. First, Patent Owner does not explain adequately why Petitioner’s assumptions and calculations are flawed. For example, Patent Owner fails to sufficiently explain why Petitioner’s assumption that the particles are spheres is flawed. *See* Prelim. Resp. 32. Goss discloses that the particles in its components “preferably are rounded in shape,” and the ’397 patent states that “[t]he particle count is also

based on a simplified assumption that all particles are spherical.” Ex. 1005, 4:5–8; Ex. 1001, 16:38–40. Patent Owner does not explain why the same assumption used in the ’397 patent for one calculation would be inapplicable to a different calculation. Nor does Patent Owner address that Goss specifically identifies its particles as “rounded in shape.”

Second, as with the previous limitation, Patent Owner makes assertions as to what Goss and the ’397 patent teach to one of ordinary skill in the art. *See* Prelim. Resp. 31–32. On the current record, those assertions are mere attorney argument, and do not undermine Petitioner’s arguments, which are supported by declarant testimony from one of ordinary skill in the art. *See* Pet. 48–50 (citing Ex. 1003). Although we determine that Petitioner makes an adequate showing as to its interpretations of the references based on the current record, we have not made any final determinations on these issues and will not do so until we review the full record at the conclusion of the trial.

c. Conclusion

Based on the foregoing, we determine that Petitioner establishes adequately that Goss discloses the “at least 47% of an external surface area of the litter” and “bulk density less than about 58 lb/ft³” limitations of claim 1. We have also reviewed Petitioner’s arguments and evidence as to the remaining limitations of claims 1 and 7. Based on our review of the current record, Petitioner establishes sufficiently that Goss discloses all the limitations of independent claims 1 and 7. Accordingly, Petitioner establishes a reasonable likelihood that independent claims 1 and 7 are anticipated by Goss.

We have also reviewed Petitioner's arguments and evidence as to dependent claims 3–8, 10–11 and 13–16. *See* Pet. 54–63. Patent Owner does not separately address the dependent claims. Prelim. Resp. 19–32. Because we institute *inter partes* review as to the independent claims 1 and 7, we also institute *inter partes* review as to dependent claims 3–8, 10–11 and 13–16. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

F. Obviousness Based on Goss

Petitioner argues that claims 2, 9, 12, and 17–19 would have been obvious based on Goss. Pet. 4, 63–70. Patent Owner raises several arguments against this challenge. *See* Prelim. Resp. 32–36. Having determined to institute an *inter partes* review as to claims 1 and 7, we also institute *inter partes* review as to these challenges. *See SAS*, 138 S. Ct. at 1359–60. We provide the following brief analysis of the parties' arguments to guide the parties during trial.

In addition to the arguments Patent Owner raises as to the independent claims, Patent Owner further argues that Goss fails to disclose or render obvious the limitation in claims 2, 9, and 17, which require “wherein the litter has a bulk density less than about 47 lbs/ft³.” Prelim. Resp. 33. Petitioner argues that its arguments as to the “bulk density less than about 58 lb/ft³” limitation “are relatively conservative” and that “FS-40 can have a bulk density of 58 lb/ft³” and “BL(2) can have a bulk density of 35 lb/ft³ (on the low end of the bulk density range) based on the [']397 Patent itself, which explains that ‘calcium bentonite’ such as Blue Mountain clay ‘used in a litter mixture may have a bulk density of 35 to 45 lbs/ft³.’” Pet. 67–68 (citing Ex. 1001, 9:29–31; Ex. 1003 ¶¶ 84–87, 202). Petitioner also argues

that “a Skilled Artisan would understand that the Blue Mountain clays, including BL(2), disclosed in Goss are the same or similar clays disclosed in the [']397 Patent, and thus would have the same or similar properties such as bulk density.” *Id.* at 68 (citing Ex. 1003 ¶ 202). Petitioner further argues that “a Skilled Artisan would have been motivated to prepare Goss Sample N using examples of FS-40 and BL(2) on the low end of the bulk density ranges.” *Id.* at 69 (citing Ex. 1003 ¶ 204).

In addition to Patent Owner’s arguments as to the bulk density limitation in claim 1, Patent Owner argues that Petitioner’s assumptions in support of its arguments as to the “bulk density less than about 47 lbs/ft³” lack support. *See* Prelim. Resp. 33–36. For example, Patent Owner argues that Petitioner’s assumption that BL(2) can have a bulk density of 35 lbs/ft³ lacks support in the record. *Id.* Patent Owner argues that Petitioner’s assertion that BL(2) can have this bulk density appears to be solely supported by a statement from the ’397 patent that states, “[i]n one embodiment of the present invention, the calcium bentonite used in a litter mixture may have a bulk density of 35 to 45 lbs/ft³.” *Id.* at 35 (citing Pet. 23, 29–30; Ex. 1001, 9:29–31; Ex. 1003 ¶ 87). Patent Owner argues that the statement does not specifically address Blue Mountain RVM clay discussed in the ’397 patent, much less the Blue Mountain BL(2) clay Goss employs. *Id.* Patent Owner also argues that Petitioner’s proposed modification of Goss fails to consider the potential impact on particle size distributions and the external surface area calculation. *Id.* at 35–36.

Petitioner’s arguments as to the lower end of the bulk density range of 35 lbs/ft³ rely on declarant testimony based on the disclosures of the ’397

patent. *See* Pet. 68 (citing Ex. 1001, 9:29–31; Ex. 1003 ¶ 202). Petitioner argues that the '397 patent describes a lower range of bulk density of 35 lbs/ft³ for calcium bentonite, that this disclosure applies to Blue Mountain RVM clay, the specific calcium bentonite the '397 patent uses in its examples, and that Goss's Blue Mountain BL(2) clay has similar properties to Blue Mountain RVM clay. *See* Pet. 23 (citing Ex. 1003 ¶ 87; Ex. 1017, 20–42), 68 (citing Ex. 1003 ¶ 202). We question whether the current record supports Petitioner's assertion that BL(2) has a bulk density in the range of 35 lbs/ft³, but we note that Petitioner's interpretation relies on currently un rebutted testimony. *See id.* Any factual disputes as to the alleged similarity between Blue Mountain RVM clay and BL(2) are best resolved after development of a full record during trial. As to Patent Owner's argument that Petitioner fails to address the impact of its modifications on the external surface area calculation, these arguments also raise factual disputes best resolved after development of the record during trial. Because we institute an *inter partes* review as to the claims 1 and 7, we also institute *inter partes* review as to claims 2, 9, and 17. *See SAS*, 138 S. Ct. at 1359–60.

We have also reviewed Petitioner's arguments and evidence as to dependent claims 12 and 18–19. *See* Pet. 63–70. Patent Owner does not separately address these dependent claims. Prelim. Resp. 32–36. Because we institute an *inter partes* review as to claims 1 and 7, we also institute *inter partes* review as to claims 12 and 18–19. *See SAS*, 138 S. Ct. at 1359–60.

CONCLUSION

For the reasons above, we grant institution of *inter partes* review.

ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–19 of the '397 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2022-01107
Patent 11,026,397 B2

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