United States District Court,
M.D. Florida, Jacksonville Division.

In re FARMLAND INDUSTRIES, INC., et al., n/k/a/ Reorganized FLI, Inc., Debtors.

J.P. Morgan Trust Company, National Association, in its capacity as Trustee of the FI Liquidating Trust,
Plaintiff.
v.
White Springs Agricultural Chemicals, Inc., d/b/a PCS Phosphate/White Springs, and PCS Sales (USA), Inc,
Defendants.

No. 3:05-cv-587-J-32JRK

March 12, 2008.

Background: Liquidating trustee of assignee filed action alleging infringement of patented process for enhancing the color of and stabilizing wet process phosphoric acid for use in liquid fertilizer.

Holdings: In construing claim terms, the District Court, Timothy J. Corrigan, J., held that:
(1) patented process required measurement of EMF (electromotive force) at the various stages where EMF was mentioned in the claims, and
(2) preamble phrase "stabilized wet-process phosphoric acid" provided a limitation to the patented process.

Claims construed.

4,808,391. Construed.

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James R. Daly, John A. Marlott, Kenneth S. Luchesi, Kevin P. Ferguson, Timothy J. Heverin, Jones Day, Chicago, IL, Katie Lee Dearing, Rutledge Richardson Liles, Liles, Gavin, Costantino & George, Jacksonville, FL, for Defendants.

MARKMAN ORDER FN1

FN1. Under the E-Government Act of 2002, this is a written opinion and therefore is available electronically. However, it is intended to decide the matter addressed herein and is not intended for official publication or to serve as precedent.

TIMOTHY J. CORRIGAN, **District Judge.**

This case pertains to a patented process for "enhancing the color of and stabilizing wet process phosphoric acid" for use in liquid fertilizer. United States Patent No. 4,808,391. ("'391 Patent"). The purpose of the patented process, which involves chemical oxidation and reduction steps, is to "produce a marketable product having color, clarity, and stability characteristics acceptable to the consumer both before and after conversion into liquid fertilizer ... produc[ing] a very desirable, green-colored stabilized acid [called green superphosphoric acid ('green SPA')] from less desirable black acid." '391 Patent col.1 ll.12-20. The two independent claims of the '391 Patent, claims 1 and 20, are set forth here:

Claim 1

1. A process for preparing color-enhanced and stabilized wet-process phosphoric acid comprising the steps of:
providing a quantity of black-colored wet-process phosphoric acid which has a P_2O_5 concentration of from about 58-72%, and contains incidental carbonaceous and metallic impurities therein;

subjecting said quantity of phosphoric acid to an initial oxidation step in order to produce a decarbonized, oxidized acid, said initial oxidation step including the steps of heating the acid to a temperature of from about 400 to 525 (deg.) F., agitating the acid and adding an oxidizing agent to the acid,

said initial oxidation step being carried out until the acid changes color from black and when diluted 1:100 by weight with deionized water exhibits an EMF of greater than about 700 mv, as compared with a standard solution of 0.01 M potassium dichromate having an EMF of 600 mv;

thereafter subjecting the initially oxidized acid to a secondary reduction step for reducing the dark-colored oxidized metal complexes in the acid and producing a stabilized green color in the acid,

said secondary reduction step being carried out until the acid again changes color and when diluted 1:100 by weight with deionized water exhibits an EMF of less than about 700 mv, as compared with said standard solution.

Claim 20

20. A process for treating black colored wet-process phosphoric acid comprising the steps of:
providing a quantity of black wet-process phosphoric acid having a P_2O_5 concentration of from about 58-72%, and incidental carbonaceous and metallic impurities therein;

subjecting said quantity of phosphoric acid to an oxidation step in order to produce a decarbonized, oxidized acid, said initial oxidation step including the steps of heating the acid to a temperature of from about 400 to 525 (deg.) F., agitating the acid, and adding an oxidizing agent to the acid,

said oxidation step being carried out until the acid changes color from black and assumes a dark greenish-brown to purple color and the acid when diluted 1:100 by weight with deionized water exhibits an EMF of greater than about 700 mv as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv.

The '391 Patent was issued to Farmland Industries, Inc. ("Farmland") as assignee on February 28, 1989. In May 2002, Farmland filed for Chapter 11 bankruptcy, and in May 2004, the plaintiff in this case, J.P. Morgan Trust Company, National Association ("J.P.Morgan") was appointed as Liquidating Trustee of the Fl ("Farmland Industries") Liquidating Trust. J.P. Morgan filed the present infringement action in June 2005 against defendant White Springs Agricultural Chemicals, Inc., d/b/a PCS Phosphate/White Springs, and PCS Sales (USA), Inc. (collectively "White Springs") FN2 seeking damages for alleged infringement from White Springs for the period between 1998 and May 2007, when the ' 391 Patent expired.FN3

FN2. Two additional corporate defendants were previously dismissed from this action. (Doc. 141.)

FN3. Farmland and White Springs' predecessor previously had a business agreement between them which involved White Springs having a royalty-free license to manufacture green SPA using the '391 patent process. The issue of whether that license expired is not before the Court at this time.

This matter is before the Court for patent claim construction, as described in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The Court has considered the briefs of the parties and accompanying exhibits (Docs.163, 164, 172, 173, 193, 195), the parties' joint claim construction statement and attachments (Doc. 157), the parties' joint claim construction chart (Doc. 190), tutorials submitted by each party, as well as argument of counsel at a Markman hearing held on February 27, 2008, the record of which is incorporated herein.

I. *Claim Construction Standards*

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.' " Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (en banc) (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1115 (Fed.Cir.2004)). "[C]laim construction analysis must begin and remain centered on the claim language itself, for that is the language the patentee has chosen to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.' " Innova/Pure Water, Inc., 381 F.3d at 1116 (citation omitted). "[T]he words of a claim are generally given their ordinary and customary meaning .... [T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1312-13 (internal quotation marks and citations omitted). The Court has recently reviewed and applied the Federal Circuit's teachings on claim construction, *see Johnson & Johnson Vision Care, Inc. v. Ciba Vision Corp.,* 2008 WL 341549, at **3-5 (M.D.Fla.2008), and follows that same procedure here.

III. *Claim Construction*

The parties' proposed constructions FN4 and the Court's determination as to each claim term construction is as follows.

FN4. The Court recognizes that as to each claim term, J.P. Morgan contends that no claim construction is needed in view of what it contends is the "plain and ordinary meaning" of the term, or because the particular term was used in the claim preamble and, according to J.P. Morgan, is not a formal limitation.

A. *Claim Construction*

Claim Term	**Farmland's Proposed Construction**	**White Springs' Proposed Construction**	**Court's Construction**
"the steps of ... heating the acid ... agitating the acid, and adding an oxidizing agent to the acid" (claims 1, 20)	*No claim construction is needed in view of the plain and ordinary meaning of this term-the steps can be performed in any order, or simultaneously.*	separate process steps performed in the order recited	***No construction necessary***
"heating the acid" (claims 1, 20)	subjecting the acid to conditions such that the temperature of the acid rises	applying external heat to the acid such that an increase in temperature results from means other than agitation or addition of an oxidizing agent	**applying external heat to the acid such that an increase in temperature results**
"until the acid ... when diluted 1:100 by weight with deionized water exhibits an EMF of greater than about 700 mv, as	until the wet-process phosphoric acid mixture undergoing oxidation, when diluted 1:100 by weight with de-ionized water, exhibits a	until the Electromotive Force (EMF) of the acid when diluted 1:100 by weight with de-ionized water is measured to be	**until the acid ... when diluted 1:100 by weight with deionized water is measured to have an EMF of greater than about 700 mv, as**

compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv" (Claims 1, 20)	redox potential (i.e., EMF) of about 700 mv or greater, as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv	greater than about 700 mv as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv	**compared with a standard solution of 0.01M potassium dischormate having an EMF of 600 mv**
"until the acid ... when diluted 1:100 by weight with de-ionized water exhibits an EMF of less than about 700 mv, as compared with said standard solution" (claim 1)	until the wet-process phosphoric acid mixture undergoing reduction, when diluted 1:100 by weight with de-ionized water, exhibits a redox potential (i.e., EMF) of about 700 mv or less, as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv	until the Electromotive Force (EMF) of the acid when diluted 1:100 by weight with de-ionized water is measured to be less than about 700 mv as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv	**until the acid ... when diluted 1:100 by weight with deionized water is measured to have an EMF of less than about 700 mv, as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv**
"the EMF of said initially oxidized acid being greater than about 750 mv" (claim 9)	the wet-process phosphoric acid mixture undergoing oxidation, when diluted 1:100 by weight with de-ionized water, exhibits a redox potential (i.e., EMF) of about 750 mv or greater, as compared with a standard solution of 0.01 M potassium dichromate having an EMF of 600 mv	the Electromotive Force (EMF) of the acid when diluted 1:100 by weight with de-ionized water being measured to be greater than about 750 mv as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv	**the EMF of said initially oxidized acid, when diluted 1:100 by weight with deioinized water, is measured to be greater than about 750 mv as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv**
"the acid" (claims 1, 2, 10, 14, 16, 17, 20)	a wet-process phosphoric acid mixture, on which the stated processing step is performed	Claim 1 (1) claim 1, col. 35, l. 68 & col. 36, ll. 1-2: the quantity of black-colored wet-process phosphoric acid which has a P_2O_5 concentration of from about 58-72%, and contains incidental carbonaceous and metallic impurities therein (as recited in col. 35, ll. 61-64). (2) Claim 1, col. 36, ll. 3-4 & col. 36, l. 11 & bonized, oxidized acid (as recited in col. 35, ll. 66-67). (3) Claim 1, col. 36, l. 14: the color-enhanced and stabilized wet-process phosphoric acid (as recited in col. 35, ll. 58-59).	***No construction necessary***

		Claim 20 (1) Claim 20, col. 38, l. 2; col. 38, l. 3 & col. 38, l. 4: the quantity of black wet-process phosphoric acid having a P_2O_5 concentration of from about 58-72%, and incidental carbonaceous and metallic impurities therein (as recited in col. 37, ll. 13-16).	
		(2) Claim 20, col. 38, l. 5 & col. 38, l. 7: the decarbonized, oxidized acid (as recited in col. 37, l. 18-col. 38, l. 1).	
"black-colored wet-process phosphoric acid" **"black colored wet-process phosphoric acid"** **"black wet-process phosphoric acid"** (claims 1, 20)	a generic term of art referring to a mixture of wet-process phosphoric acid and impurities of a type and quantity that give the mixture a black color	wet process phosphoric acid that is black in color and not green or dark greenish-brown to purple	***No construction necessary***
"stabilized wet-process phosphoric acid" (claim 1)	a phosphoric acid mixture which is not prone to appreciable change during subsequent processing or conversion into liquid fertilizer	wet process phosphoric acid that will not appreciably change in color during subsequent processing and will not appreciably darken or char or form metal phosphate sludges during concentration or conversion into liquid fertilizer	**a wet process phosphoric acid that will not appreciably change in color or in other relevant physical and chemical properties during subsequent processing or conversion into liquid fertilizer**
"color-enhanced ... wet-process phosphoric acid" (claim 1)	a phosphoric acid mixture, the color of which has been changed from black to a more commercially desirable green color	wet process phosphoric acid that exhibits at least 85% transmittance at 510 nm diluted with water to contain around 18_2O_5 (3 g acid/10 ml H_2O for 68% P_2O_5) as measured using a scanning UV/Vis spectrophotometer	**wet process phosphoric acid of a commercially desirable green color and at least about 85% transmittance at 510 nm, when the acid is diluted with water to around 18_2O_5**
"decarbonized, oxidized acid" (claims 1, 20)	wet-process acid having undergone the prescribed oxidation step, wherein the acid mixture contains less carbon, as compared to before the oxidation step	acid that has been oxidized and from which carbonaceous impurities have been removed so as to either reduce the carbonaceous impurities to below 1000 ppm or reduce the weight ratio of carbonaceous impurities to $P_2 O_5$ in the acid to less than 0.0015	**acid that has been oxidized and the carbonaceous concentration in the acid has been reduced below 1000 ppm or the weight ratio of carbonaceous material to P_2O_5 in the acid is less than 0.0015.**

"Initially oxidized acid" (claims 1, 9, 11-14)	*No claim construction is needed in view of the plain and ordinary meaning of this term-term does not include "decarbonized" limitation.*	the decarbonized, oxidized acid (as recited in col. 35, ll. 66-67)	***No construction necessary***
"wet-process phosphoric acid" (claims 1, 20)	a generic term of art that refers to a phosphoric acid mixture which includes varying amounts of impurities and which has been obtained from phosphate rock using the 'wet process'	phosphoric acid produced by treating phosphate rock with any of the mineral acids	***No construction necessary***
"said quantity of phosphoric acid" (claims 1, 20)	an amount of black-colored wet-process phosphoric acid which has a P_2O_5 concentration of from about 58-72%, and contains incidental carbonaceous and metallic impurities therein	Claim 1: the quantity of black-colored wet-process phosphoric acid which has a P_2O_5 concentration of from about 58-72%, and contains incidental carbonaceous and metallic impurities therein (as recited in col. 35, ll. 61-64)	***No construction necessary***
		Claim 20: the quantity of the black wet-process phosphoric acid having a P_2O_5 concentration of from about 58-72%, and incidental carbonaceous and metallic impurities therein (as recited in col. 37, ll. 13-16)	
"stabilized green color" (claim 1)	*Agreed*	*Agreed*	**a green color that is not prone to appreciable change during subsequent processing or conversion into liquid fertilizer**

B. *Discussion*

While the explanation for most of the Court's constructions is self-evident, several constructions warrant discussion.

3.FN5 "until the acid ... when diluted 1:100 by weight with de-ionized water exhibits an EMF of greater than about 700 mv, as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv" (claims 1, 20)

4. "until the acid ... when diluted 1:100 by weight with de-ionized water exhibits an EMF of less than about 700 mv, as compared with said standard solution" (claim 1)

FN5. The numbers are those assigned by the parties in their Table Of Claims To Be Construed (Doc. 190-3), and are used here for ease of reference.

5. "the EMF of said initially oxidized acid being greater than about 750 mv" (claim 9)

[1] The so-called "EMF Terms" present the same dispute between the parties: whether the process requires measurement of EMF at the various stages where EMF is mentioned in the claims. The patent specifications define "EMF" and provide as follows:

> It is preferred to measure the progress of the reactions in the process of the invention by determination of the EMF of the reaction mixture. The EMF or electromotive force is a measure of the oxidation potential or oxidation state of the reaction mixture. The measured potential is a function of the oxidation state of the metallic impurities in the wet process acid .... All EMF values are dependent upon the strength and concentration of impurities in the wet-process acid, and in all cases samples of acid are diluted 1:100 by weight with deionized water prior to determination of EMF values.

'391 Patent col.9 ll.24-37. "The EMF is typically measured using a platinum electrode referenced to a standard calomel electrode." Id. col.9 ll.38-52 (describing EMF measurement procedures).

The independent claims state that the oxidation step is carried out until the acid changes color "*and*" the acid when diluted "exhibits" a specified EMF. The claims also include a description of the measurement procedure. The specifications repeatedly provide for EMF calculation throughout the process.

> The initial oxidation step is carried out until the acid, diluted 1:100 by weight with deionized water, exhibits an EMF of greater than about 700 mv, as compared with a standard solution of 0.01M potassium dichromate having an EMF of 600 mv.

'391 Patent col.7 ll.57-62.: *see also* id. col.10 ll.3-7 ("[c]onditions are maintained within the reactor such that the EMF of the reaction mixture ranges from 700 to 800 mv, preferably above 750 mv, relative to the standard solution, and the decarbonized product is purple-colored").

As to the reduction step,

> This secondary reduction step can be effected by a number of processes, but is generally carried out until the acid, diluted 1:100 by weight with deionized water, exhibits an EMF of less than about 700 mv, as compared with the aforementioned standard solution.

'391 Patent col.7 l.68-col.8 ll.1-5; *see also* id. col.8 ll.37-42 (the secondary reduction step "to lower the EMF of the acid to below 700 mv ..."); id. col.10 ll.26-29 ("[t]he aging process continues until the acid attains the desired EMF and green color and/or until the acid exhibits at least 85% transmittance ...."); id. col.10 ll.30-38 (alternatively aging acid in evaporator to produce "a green color-enhanced SPA having an EMF above 600 mv"); id. col.10 ll.41-48 (secondary reduction reaction using a reducing agent will "decrease the aging time required to lower the EMF ...."); id. col.11 ll.6-12 ("[a]ddition of a suitable reducing agent continues until the acid attains the same desirable color, EMF, and maximum transmittance achieved by the previously described aging operation"); col.14 ll.60-64 ("[t]he EMF of the final stablized green-colored acid, however, should preferably be between 700 and 600 mv relative to the standard ...."). The patent's description of preferred embodiments underscores that "[o]verall product stability is related to the EMF of the acid ...." '391 Patent col.14 ll. 9-10.

[2] [3] J.P. Morgan's contention that the word "exhibits" in the claim term signals that actual measurement of EMF was not contemplated, and that to require measurement of EMF would introduce an unclaimed step to the process is without merit. According to J.P. Morgan, a process operator need only to observe the color of the acid as it moves through the process to determine whether the claimed step is complete. However, J.P. Morgan's interpretation ignores the patent's requirement for more precise EMF levels. Claims do not stand alone; "[r]ather, they are part of 'a fully integrated written instrument,' Markman, 52 F.3d at 978, consisting principally of a specification that concludes with the claims.' " Phillips, 415 F.3d at 1315 (quoting Markman, 52 F.3d at 978). The specification " 'is always highly relevant to the claim construction analysis ...' " Phillips, 415 F.3d at 1315 (citation omitted). "[T]he descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based on the description.

The specification is, thus, the primary basis for construing the claims.' " Phillips, 415 F.3d at 1315 (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed.Cir.1985)). The patent requires measurement of EMF as a key component of the process.

8. "stabilized wet-process phosphoric acid" (claim 1)

[4] J.P. Morgan argues that this term appears in the preamble of claim 1 and thus is merely introductory, adding no limitation to the claim. However, the only other mention of "stabilized" in claim 1 refers to "producing a stabilized green color in the acid." '391 Patent col.36 l.12. The specifications and context of the invention indicate that the objective of the patented process is to achieve a wet-process phosphoric acid that is "stabilized" in more ways than color:

Acid produced by the process will convert into ammonium polyphosphate liquid fertilizer that has a desirable green color and stability and that generates significantly less sludge during storage compared to conventional fertilizer produced from black-colored and conventional green, nonstabilized wet-process phosphoric acid.

'391 Patent col.7 ll.1-7. Stated objectives of the invention include:

c. to prevent purified and green-colored wet-process acid from charring or darkening in color during subsequent processing ....

id. col.7 ll.17-22, and

h. to give green-colored or color-enhanced ammonium polyphosphate solutions that can be stored commercially without the precipitation of significant amounts of insoluble sludges containing ferrous phosphate.

Id. col.7 ll.41-45. In summary,

The various concentrations of wet-process acid that are purified and enhanced in color by this invention will not unfavorably change in color or in other relevant physical and chemical properties during subsequent processing by evaporation or conversion into liquid fertilizer ....

'391 Patent col.9 ll.13-18.

[5] [6] "In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim." On Demand Machine Corp. v. Ingram Ind., Inc., 442 F.3d 1331, 1343 (Fed.Cir.2006), *cert. denied,* 549 U.S. 1054, 127 S.Ct. 683, 166 L.Ed.2d 516 (2006). " '[A] claim preamble has the import that the claim as a whole suggests for it.' " Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed.Cir.1999). "Whether to treat a preamble as a limitation is a determination 'resolved on review of the entire[ ] ... patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.' " Catalina Mktg. Int'l, Inc. v. Coolsavinqs.com, Inc., 289 F.3d 801, 808 (Fed.Cir.2002) (citation omitted). A preamble will be regarded as limiting if it is " 'necessary to give life, meaning, and vitality' to the claim." Catalina Mktg., 289 F.3d at 808 (citation omitted); that is, "where it recites essential structure" that is important to the invention, id., where claim terms may "only be understood in the context of the preamble statement," Pitney Bowes, 182 F.3d at 1309, or "if it recites not merely a context in which the invention may be used, but the essence of the invention without which performance of the recited steps is nothing more than an academic exercise." Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp., 320 F.3d 1339, 1345 (Fed.Cir.2003). In such circumstances, "there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the 'claim.' " Pitney Bowes, 182 F.3d at 1305. Looked at in this light, the phrase "stabilized wet-process phosphoric acid" provides a limitation to the patented process.

White Springs proposes that "stabilized" should be construed to mean that the acid "will not appreciably change in color during subsequent processing *and* will not appreciably darken or char or form metal phosphate sludges during concentration or conversion into liquid fertilizer." (Doc. 190-3 at 4 (emphasis added).) The basis for White Springs' proposal is found in the patent's "Description Of The Preferred Embodiments."

> Overall product stability is related to the EMF of acid and is a measure of two independent characteristics: color stability and the tendency of the metallic impurities in the acid to form metal phosphate sludges after conversion into ammonium phosphate liquid fertilizers. Color-stabilized phosphoric acid will not appreciably change in color during subsequent processing after the treatment process of the present invention. Stabilized green-colored phosphoric acid produced by the treatment process hereof will not darken or char during concentration or conversion into liquid fertilizer.

'391 Patent col.14 ll.9-20. While the passage refers specifically to the stability of the acid during subsequent processing, including during concentration and conversion into liquid fertilizer, the Court believes that a construction based upon the summary specification, '391 Patent col.9 ll.13-18, encompasses the multi-faceted requirements of "stabilized wet-process phosphoric acid," including the specific characteristics in the patent's preferred embodiment cited by White Springs.

9. "color enhanced ... wet process phosphoric acid" (claim 1)

[7] This term appears in the preamble of Claim 1 and reads in full:

> A process for preparing color-enhanced and stabilized wet-process phosphoric acid comprising the steps of: ...

'391 Patent col.35 ll.58-60.

J.P. Morgan contends that the phrase "color-enhanced ... wet-process phosphoric acid" is merely an introductory preamble, with no limitation value. Claim 1 later discloses that step two of the process, the reduction step, produces "a stabilized green color in the acid." J.P. Morgan contends that the goal of the process stops there, and that "color-enhanced" merely reflects the green-colored acid mentioned later in the claim, and provides no further limitation. (Doc. 163 at 26.) White Springs contends that the patent focuses upon the clarity of the resultant wet-process phosphoric acid.

The specifications indicate, however, that both green color and clarity are important components of the desired green SPA produced by the patented process. For instance, the "Background" of the invention specifies that

> This invention relates to the field of liquid fertilizers prepared from wet-process phosphoric acid, and especially to an improved process for stabilizing and enhancing the color of wet-process phosphoric acid to produce a marketable product having color, clarity, and stability characteristics acceptable to the consumer both before and after conversion into liquid fertilizer.

'391 Patent col.1 ll.8-14. The "Background" section acknowledges that "most consumers associate the black color with an unstable and inferior product, and prefer to purchase a green-colored clarified phosphoric acid typically produced from calcined phosphate rock." Id. col.3 ll. 52-55.

The "Summary" of the invention specifies a transmittance level at the end of both the oxidation and the reduction step.

> At the conclusion of the initial oxidation step, the acid should ... exhibit a dark greenish-brown to purple color. Further, such initially oxidized acid should exhibit less than about 60% transmittance upon dilution with water to contain 18% P_2O_5, at 510 nm.

'391 Patent col.8 ll.30-36; *see also* '391 Patent col.10 ll. 7-10 ("[t]he purple-colored, oxidized acid should exhibit about 60% transmittance at 510 nm when diluted to around 18% P_2O_5, and should contain less than

1000 ppm carbon").

At the conclusion of the reduction step, transmittance is described as follows:

> The secondary reduction step involves either the addition of a sufficient amount of a suitable reducing agent, or allowance of sufficient aging time in the absence of additional oxidant to lower the EMF of the acid to below 700 mv and preferably between about 650-700 mv relative to the potassium dichromate standard. Such reduced acid should also exhibit at least about 85% transmittance at 510 nm, when the acid is diluted with water to around 18% $P_2 O_5$.

'391 Patent col.8 ll.37-45; *see also* id. col.10 ll.26-29 ([t]he aging process continues until the acid attains the desired EMF and green color and/or until the acid exhibits at least 85% transmittance at 510 nm when diluted to contain around 18% P_2O_5); id. col.11 ll.6-9 (if a reducing agent is used in the reduction step, "[a]ddition of a suitablereducing agent continues until the acid attains the same desirable color, EMF, and maximum transmittance achieved by the previously described aging operation"). The "Summary" of the patent teaches that

> The present invention thus provides a simple and relatively inexpensive method of enhancing the color and stabilizing wet-process phosphoric acid produced from phosphate rock containing major and minor metallic impurities, including manganese, such that the metallic impurities in the product acid are stabilized in an optimized oxidation state and the product acid has the commercially desirable green color and lowered viscosity of acid typically obtained from phosphoric acid produced by a calcining process. The various concentrations of wet-process acid that are purified and enhanced in color by this invention will not unfavorably change in color or in other relevant physical and chemical properties during subsequent processing ....

'391 Patent col.9 ll.4-20.

The term "color-enhanced," as used in "Preferred Embodiments" of the '391 Patent, is multi-faceted. In describing "the secondary stage of the preferred process," (id. col.19 l.28),

> The aging process continues until the acid obtains the desired EMF and green color. The desirable green color demonstrated by optimally *color-enhanced acid* is described subjectively as olive green or emerald green or another color similar to the color of phosphoric acid produced from calcined western apatite rock. Proper *color-enhanced acid* should exhibit at least 85% transmittance at 510 nm diluted with water to contain around 18% $P\ _2O_5$ (3 g acid/10 ml H_2O for 68% P_2O_5) as measured using a scanning UV/Vis spectrophotometer.

'391 Patent col.19 ll.51-59. Addition of "[t]he most suitable inorganic reducing agents" (id. at col.20 l.46) during the reduction step reduces the time necessary for aging "while enhancing the color of the acid to produce an emerald green-colored acid having at least 85% transmittance at 510 nm." ' 391 Patent col.20 ll. 55-57.

J.P. Morgan's contention that dependent claim 13, which claims

> [t]he process of claim 1, said initially oxidized acid exhibiting less than 60% transmittance upon dilution with water to contain 18% P_2O_5, to 510 nm.

'391 Patent col.36 ll.54-56 (claim 13), demonstrates that only that one claim requires a degree of clarity, is without merit. Dependent on claim 1, claim 13 merely specifies the clarity at the end of the oxidation step, suggesting that clarity is indeed a factor and desired result of the two-step process described in Claim 1.

J.P. Morgan's proposed construction teaches a green-colored product without regard to clarity or transmissibility; White Springs' proposed construction contemplates the clarity of the wet process phosphoric acid with no provision for its actual color. The objective of the invention and the patent's specifications make clear that "color enhanced" contemplates both color and clarity, both of which are disclosed as essential and important to consumer marketability and satisfaction. Creation of a wet-process phosphoric acid of desirable color and clarity constitutes the essence of the invention, and the use of the word "color-enhanced" in the preamble of Claim 1 states the purpose of the invention and must be regarded as a limitation in order that the claim embraces this obvious requirement of the patented process. The Court concludes, based upon its readings of the purpose of the patented method, as well as the specifications therein, that the proper construction of "color-enhanced" should embrace both color and clarity.

10. "decarbonized, oxidized acid" (claims 1, 20)

[8] This term describes the wet-process phosphoric acid at the end of the "initial oxidation step" in the patented process. '391 Patent col.35 ll.66-67; id. col.37 l.18-col.38 l.1. The "Summary" of the invention describes the level of decarbonization at the conclusion of the oxidation step as follows:.

> At the conclusion of the initial oxidation step, the acid should contain less than about 1,000 ppm of carbonaceous impurities, and should exhibit a dark greenish-brown to purple color ....

'391 Patent col.8 ll. 30-33; *see also* id. col.10 ll.7-10 ("[t]he purple-colored, oxidized acid should exhibit about 60% transmittance at 510 nm when diluted to around 18% P_2O_5, and should contain less than 1000 ppm carbon").

The preferred embodiment of the invention provides that

> The reaction should continue or sufficient residence time should be allowed in the primary reactor *22* to reduce the carbonaceous concentration in the acid to below 1000 ppm or until the weight ratio of the carbonaceous material to P_2O_5 in the acid is less than 0.0015.

'391 Patent col.15 l.68-col.16 ll.1-5. Additionally, White Springs cites to the preferred embodiment language which states

> ... [S]ome residual organic compounds may remain in the acid when using an organic reducing agent at the lower temperature. These residual organic compounds will not darken or discolor the acid during subsequent processing as long as the total amount of carbonaceous material in the acid is less than about 1000 ppm, or an amount of carbonaceous material is less than about 0.0015 lb. carbon/lb. P_2O_5 in the acid, and the EMF of the green, color-enhanced acid is less than 700 mv. The total amount of carbonaceous material includes the residual organic material remaining in the acid after the primary stage of the process and the residual organic compounds remaining in the acid after the secondary stage of the process.
>
> ... [A]ddition of a suitable organic reducing agent continues until the acid attains the same desirable green color, EMF, and maximum transmittance achieved by the previously described aging operation, provided the concentration of organic material in the acid does not exceed about 1000 ppm or an amount of carbonaceous material less than about 0.0015 lb. carbon/lb. P_2O_5 in the acid.

'391 Patent col.22 ll.13-34.

J.P. Morgan contends that adopting White Springs' carbon limitation "to below 1000 ppm" improperly reads a limitation into claim 1 that would render dependent Claim 11 superfluous.FN6 (Docs. 163 at 43; 173 at 24.) White Springs argues that its proposed claim, which tracks the specifications, contains two alternative criteria: 1) reducing the carbonaceous impurities "to below 1000 ppm" *or* 2) reducing "the weight ratio of carbonaceous impurities to P_2O_5 in the acid to less than 0.0015," and that Claim 1 is broader than Claim 11 because it can be met by satisfying either criteria. (Doc. 172 at 12.)

FN6. Claim 11 provides:
11. The process of claim 1, said initially oxidized acid containing less than about 1,000 ppm of carbonaceous impurities.

'391 Patent col.36 ll.48-50.

[9] The Court is mindful of the " 'doctrine of claim differentiation. While the doctrine of claim differentiation is not a hard and fast rule of construction, it does create a presumption that each claim in a patent has a different scope.' " SunRace Roots Enterprise Co. v. SRAM Corp., 336 F.3d 1298, 1302-03 (Fed.Cir.2003) (citation omitted) "That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." SunRace Roots Enterprise Co., 336 F.3d at 1303; *see generally* SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1122 (Fed.Cir.1985) ("when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim ...").

However, "[t]he overall objective of the present invention is to provide a process for effectively *decarbonizing,* enhancing the color, and stabilizing wet-process phosphoric acid" to produce a "marketable commercial phosphoric acid ... that may be satisfactorily converted into ... liquid fertilizer." ' 391 Patent col.6 ll.49-56 (emphasis added). Claims 1 and 20 provide no guidance how much "decarbonizing" must take place during the first step of the process (the oxidation step), instead referring only to "decarbonized, oxidized acid." The specifications make clear that in order for the patented process to work, that is, to produce a green color-enhanced and stabilized wet-process phosphoric acid for subsequent processing and conversion into liquid fertilizer, the black-colored wet-process phosphoric acid must be "decarbonized" to a certain point by the end of the oxidation step. J.P. Morgan's proposed construction of "less carbon, as compared to before the oxidation step" does nothing to define the scope and limits of the invention (and underscores the need to construe the term in accordance with the limitations sets forth in the specifications). For instance, under J.P. Morgan's construction, a minuscule reduction in carbonaceous impurities during the oxidation step, no matter what the resultant level of impurities, would meet the claim. White Springs cites to language in the specifications and preferred embodiments providing specific levels of carbon removal.

While the Court acknowledges the precept counseling against importing limitations onto a claim from the specification, *e.g.,* MBO Lab., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333 (Fed.Cir.2007), the Court crosses the "fine line" to read these independent claims in light of the specifications. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998); *see also* Phillips, 415 F.3d at 1315. Otherwise, Claims 1 and 20 provide no guidance as to the scope and limit of one of the invention's objectives which is to "effectively decarbonize" wet-process phosphoric acid. In this case, the specifications resolve the otherwise ambiguous term "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." Teleflex, Inc. v. Ficosa N. America Corp., 299 F.3d 1313, 1325 (Fed.Cir.2002). Absent any other guidance, the Court construes the term "decarbonized, oxidized acid" in light of the specifications.

It is hereby

ORDERED:

1. Absent further Order, further proceedings will be consistent with this Order.

2. No later than **April 2, 2008,** any party may file a motion for reconsideration of this Order, pointing out any error of fact or law it believes the Court has made. The motion will be limited to ten (10) pages, 13-point font and no footnotes. If a motion is filed, the opposing party may respond by **April 18, 2008** with the identical page and formatting limitations. This Order will become final following the Court's ruling on any motion for reconsideration.

3. Upon consideration of Plaintiff's Motion Proposing Case Schedule and attachments thereto (Doc. 196), the following deadlines and settings apply:

All discovery opens, including damages and willfulness:	**March 12, 2008**

Parties to update prior discovery responses (to extent previously limited by Court's Order dated April 3, 2006 (Doc. 88):	**March 28, 2008**
Parties to notify the Court regarding when mediation should be scheduled	**April 15, 2008**
Fact discovery closes (including damages and willfulness):	**May 30, 2008**
Service of opening expert reports (on those issues on which each party bears the burden of proof) and Rule 26(a)(2) disclosures:	**June 13, 2008**
Service of rebuttal expert reports and Rule 26(a)(2) disclosures:	**July 11, 2008**
Expert discovery closes:	**August 8, 2008**
Dispositive and *Daubert*motions deadline:	**September 5, 2008**
Responses to Dispositive and *Daubert* motions due:	**October 3, 2008**
Filing of Pretrial Statement:	**January 14, 2009**
Final Pretrial Conference:	**January 21, 2009** **3:00 p.m.** **Courtroom 10B**
Trial Term:	**February 2-13, 2009** **(9:00 a.m.-Jury 10 days)**

All other provisions of the Court's Case Management and Scheduling Order, dated September 29, 2005 (Doc. 20) remain in effect.

DONE AND ORDERED.

M.D.Fla.,2008.
In re Farmland Industries, Inc.

Produced by Sans Paper, LLC.