UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA

KEWAL SINGH, Plaintiff, v. FEDERAL CROP INSURANCE CORPORATION, Defendant.	Case No. 1:17-cv-01373-SAB ORDER DENYING PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT AND GRANTING DEFENDANT'S MOTION FOR SUMMARY JUDGMENT (ECF Nos. 21, 22, 23, 24)

I.

INTRODUCTION

This is an action for judicial review under the Administrative Procedure Act, 5 U.S.C. § 701, *et seq.*, of final agency action relating to the federal crop insurance program. Plaintiff seeks review of the good farming practices determination pertaining to Plaintiff's 2015 almond crop. Currently before the Court are the parties' cross-motions for summary judgment. The Court heard oral arguments on December 12, 2018. (ECF No. 25.)[1] Counsel Tracy Agrall appeared for Plaintiff Kewal Singh ("Singh" or "Plaintiff"), and counsel Benjamin E. Hall appeared for Defendant Federal Crop Insurance Corporation ("FCIC" or "Defendant"). (Id.) Having considered the moving, opposition and reply papers, the declarations and exhibits attached thereto, arguments presented at the December 12, 2018 hearing, as well as the Court's file,

[1] All references herein to pagination of specific documents pertain to those as indicated on the upper right corners via the CM/ECF electronic court docketing system.

Plaintiff's motion for summary judgment is DENIED, and Defendant's motion for summary judgment is GRANTED.

II.

BACKGROUND

A. Procedural History

On October 12, 2017, Plaintiff filed this action seeking judicial review and declaratory relief under the Administrative Procedure Act ("APA"). (ECF No. 1.) On December 22, 2017, Defendant filed an answer. (ECF No. 9.) On February 6, 2018, pursuant to U.S.C. § 636(c)(1), the parties consented to the jurisdiction of the undersigned magistrate judge to conduct all proceedings in this matter, including trial and entry of final judgment. (ECF Nos. 14, 15.) On April 26, 2018, Defendant lodged the Administrative Record with the Court. (ECF No. 19.) On July 23, 2018, Plaintiff filed a motion for summary judgment. (ECF No. 21.) On August 22, 2018, Defendant filed an opposition to Plaintiff's motion for summary judgment and a cross-motion for summary judgment. (ECF No. 22.) On September 19, 2018, Plaintiff filed a reply brief in support of his motion for summary judgment and in opposition to Defendant's cross-motion for summary judgment. (ECF No. 23.) On October 3, 2018, Defendant filed a reply in support of Defendant's cross-motion for summary judgment. (ECF No. 24.) The Court heard oral arguments on December 12, 2018. (ECF No. 25.)

B. Plaintiff's Allegations in the Complaint

Plaintiff was engaged in almond farming in the County of Fresno, California, during the time period relevant to this matter. (Compl. ¶ 1, ECF No. 1.) Under the Federal Crop Insurance Act, crop insurance is available through private approved insurance providers ("AIP(s)"), with such policies reinsured and regulated by the Defendant, FCIC. (Compl. ¶ 5.) The FCIC is a government owned corporation managed by the U.S. Department of Agriculture ("USDA"), and the Risk Management Agency ("RMA"). (Compl. ¶¶ 2, 5.)

In 2015, Plaintiff's almond orchard was covered by a certain crop insurance policy insuring production and revenue for the crop, bearing Crop Insurance Policy No. MP-03923094. (Compl. ¶ 7.) The Policy insured the 194-acre almond crop against drought, heat, and other

natural causes of crop failure. (Id.) During the 2015 crop season, the Central Valley of California experienced severe heat conditions which allegedly caused Plaintiff to suffer insurable losses to his almond crop, and Plaintiff timely submitted a claim to Rain and Hail Insurance Service ("RHIS"), an AIP, on April 6, 2015. (Id.)

On April 29, 2016, RHIS denied Plaintiff's insurance claim, finding that a lack of adequate irrigation severely affected the production for the 2015 crop year. (Compl. ¶ 9.) On July 1, 2016, Plaintiff requested a good farming practices ("GFP") determination from RMA. (Compl. ¶ 11.) On October 13, 2016, RMA upheld RHIS's assessment that Plaintiff did not follow good farming practices due to his failure to provide irrigation water to the almonds at appropriate times and amounts in the 2014 crop year, which in turn impacted the 2015 crop. (Id.)

Following RMA's determination, Plaintiff filed a complaint in the above-entitled court on October 12, 2017, seeking judicial review and declaratory relief pursuant to the APA and the Federal Crop Insurance Act, 7 U.S.C. § 1501 *et seq*. (Compl. ¶ 5.) In summary, Plaintiff argues that Defendant improperly denied crop insurance indemnity for Plaintiff's 2015 crop under the federally reinsured crop insurance policy. (Compl. ¶ 6.) Plaintiff seeks relief under the APA asserting the agency's GFP determination is in contradiction of the evidence of record, is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. (Compl. ¶¶ 16-17.) Plaintiff also seeks a declaration that: 1) Plaintiff suffered crop loss due to insured natural causes and therefore is entitled to coverage under the policy; 2) Plaintiff's crop loss is not due to lack of good farming practices; 3) Plaintiff is entitled to payment of its 2015 crop insurance claim and the indemnity shall be due and payable; and 4) Defendant's good farming practice determination was arbitrary and capricious. (Compl. ¶ 24.)

C. Factual Background in the Administrative Record

The following subsections outline the facts contained in the administrative record that are most relevant to the Court's review of the agency's GFP determination.

1. RHIS Insurance Adjuster Site Visits

After Plaintiff filed his insurance claim, the RHIS adjuster visited the orchard multiple

times. On April 24, 2015, the adjuster noted: "Visited ranch for GSI. Definite payable. Crop is light. Will appraise in May/June."[2] (Administrative Record ("AR") 341.) On June 12, 2015, the adjuster noted: "Looks like trees haven't had water for some time. Crop is definitely very light . . . Don't know what's going on with water issue here. Need to speak to grower. A lot of trees are dying." (Id.) On June 16, 2015, the adjuster noted: "Spoke to grower. He says he's been irrigating again a few days ago." (AR 342.)

The entry for July 7, 2015, states "Spoke to insured. He said he's continuing to farm almonds, irrigating, etc." (Id.) On July 9, 2015, the adjuster noted: "Visited ranch. Looks like its [sic] been abandoned. No evidence of recent irrigation." (Id.) On August 7, 2015, the adjuster noted: "Visited ranch again. Very bad. Possibly 80% of orchard is dead or at point of no return. No evidence of recent irrigation. Took photos." (Id.) On September 3, 2015, the adjuster noted: "Called & spoke to insured. Requested input records again. He says already harvested crop, around 30,000 lbs. total. Only about 150 lbs/a." (AR 343.)

The RHIS adjuster also took photographs of Plaintiff's almond orchard and the neighboring orchard owned by another farmer. The photos include: 1) the neighboring orchard on June 18, 2015 (AR 296-97); 2) Plaintiff's orchard, irrigation equipment, and utility meter, on June 12 and June 18, 2015 (AR 306-337); 3) a picture of Plaintiff's orchard on one side with the neighboring almond orchard on the other side on June 18, 2015 (AR 338-339); and 4) Plaintiff's orchard on August 7, 2015 (AR 298-305).

2. RHIS's Denial of Plaintiff's Insurance Claim

On April 29, 2016, RHIS denied Plaintiff's claim asserting that he had not properly irrigated the orchard in 2014 and such lack of adequate water had affected the crop production for the 2015 crop year. (AR 283-85.) The RHIS denial stated in relevant part:

> Your irrigation well was not operating during the winter and spring months and personal observations during the year by the adjuster and myself showed lack of sufficient water application to produce a crop at the guaranteed level. Almond trees with the use of micro sprinklers require the annual application of 4.36 ac/ft. of water. We have not been able to confirm application of water post-harvest

[2] The handwritten adjuster notes are written in all capitalized letters, however for purposes of this opinion, all such quotations have been changed to standard sentence capitalization.

> 2014, through the winter months nor adequate amounts throughout the year. Although there was a heat event in March of 2014 [sic], it was not to the degree that would cause the lack of crop you are claiming as a standalone event . . .
>
> . . . Therefore . . . [RHIS] must deny your claim for loss to your almond crop. The lack of adequate irrigation severely affected the crop production for the 2015 crop year. Which [sic] has prevented RHIS from determining any actual losses due to weather related production losses. Therefore, RHIS must appraise your crop at the full guarantee as per the policy procedures for not following good farming and irrigation practices under the USDA, FCIC program . . .
>
> . . . As found in the Common Crop Insurance Policy . . . If you disagree with our decision of what constitutes a good farming practice, you must request a determination from FCIC of what constitutes a good farming practice before filing any suit against FCIC.

(AR 283-84.) Following a request for reconsideration, RHIS upheld its denial of Plaintiff's claim on June 6, 2016. The letter repeated much of the language in the original April 29, 2016 denial letter, and also stated:

> We have reviewed the documents provided and have determined that based on your lack of adequate irrigation for your almond acreage in 2013 and 2014 contributed [sic] to the lack of almonds produced in the crop year 2015. This is not an insurable covered peril and therefore your claim must remain denied for failure to follow recognized good farming practices for the insured crop and failure to carry out a good irrigation practice for the insured crop . . . Almond trees with the use of micro sprinklers require the annual application of 4.36 ac/ft. of water. Based on the irrigation information that you provided for our review, it confirms that you only applied 2.24 ac/ft in crop year 2014 and 2.36 ac/ft in crop year 2014. Although there was a heat event in March of 2015, it was not to the degree that would cause the lack of crop you are claiming as a standalone event.

(AR 287.)[3] RHIS notified Plaintiff that a request for reconsideration must be filed with USDA/RMA within thirty (30) days of receipt of the letter. (AR 289.)

3. Plaintiff's Request for a GFP Determination from RMA

On July 1, 2016, Plaintiff submitted a request for a determination of good farming practices to RMA. (AR 267-72.) Plaintiff raised several points of contention, with the following excerpts most relevant to RMA's determination:

> The Denial Letter incorrectly indicates that the irrigation pump and well was not operating during the winter and spring months and 'personal observations' showed lack of sufficient water allocation. In fact, the adjustor and Mr. Gribbens visited the property on a particular day the pump was not operating but the pump was consistently being used during the entire growing season as conclusively proven by the monthly pump PG&E billings . . . This comment in the Denial

[3] The Court notes that the letter provides two different figures for the year 2014, 2.24 and 2.36. It appears that RHIS intended to provide the figures of 2.24 acre-feet in crop year 2013, and 2.36 acre-feet in crop year 2014.

> Letter should accordingly be given no weight . . .
>
> The Denial Letter incorrectly indicates that almond trees with micro sprinklers require the annual application of 4.36 ac/ft of water. It appears that this number was derived from the [CIMIS Figures**]** but this generalized number does not take into consideration the area where the subject orchard is located, the soil type, or average water application of farmers in the same approximate locale. The estimate is only an average (for non-drought years) and not a case-by-case determination. Nor does this average for non-drought irrigation consider the economics of some degree of deficit irrigation strategy in a severe drought year. The Grower provided information demonstrating that adequate water was applied post-harvest in 2014 to prepare the orchard for the 2015 growing season. The issue is whether sufficient water was provided to produce a full crop and not whether ideal amounts of water were applied as if no drought was occurring in California.
>
> The Denial Letter incorrectly indicates that the irrigation information provided 'confirms that you only applied 2.24 ac/ft in crop year 2014 and 2.36 ac/ft in crop year 2014' which does not make sense. In fact, the Grower applied 3.11 ac/ft of irrigation water in 2014 and there was an additional .58 ac/ft in rainfall water available to the trees . . . for a total of 3.69 ac/ft of water in 2014 (during a drought year). It is unclear what Mr. Gribbens means in the letter was he references CY2014 twice with two different numbers. It appears that Mr. Gribbens was indicating his calculation was 2.36 ac/ft for 2015 and this would not have accounted for an additional .36 ac/ft of rainfall per CIMIS. The CY2015 irrigation information is nearly irrelevant to this early CY2015 claim as the crop loss is confirmed to have occurred at blossom time, reported in April 2015, and confirmed shortly thereafter, not later in the CY2015 season. Water applications in CY2015 after February/March blossom damage would not have created a larger crop.
>
> The Denial Letter discounts the heat event reported in March 2015 as the cause of the loss. It was clear in March 2015 that the crop on the trees only amounted to about 100-300 lbs/acre and so the adequacy of CY2014 irrigation is the focus of the water analysis. Clearly, the [sic] early in the year 2015, heat and the extreme blossom drop are correlated . . .
>
> . . . The Denial Letter bases the denial on lack of good farming practices due to lack of adequate water. In fact, because of the early in the year crop loss events reported by the Grower, the subject orchard was only carrying 100-300 lbs/acre of almonds, reducing the amount of water required by the trees, particularly considering deficit irrigation strategies and stress management. The amount of water actually provided was more than sufficient to produce the maximum crop potential in light of the reported loss events, including extreme heat. (See expert articles regarding deficit irrigation for the remainder of CY2015 cited in relevant section below.)

(AR 267-69.) Plaintiff's July 1 letter also provides additional facts concerning Plaintiff's orchard and the specific attributes of the local farming area. It states that the orchard is located in the Westlands Water District, with "little water availability directly from the District except by purchase," and because it was a drought year, Plaintiff utilized micro-sprinklers and conservative

water usage strategies. (AR 269.) Specifically, Plaintiff argues:

> The Grower has applied a conservative Deficit Irrigation Strategy (**See Wikipedia re Deficit Irrigation, Exhibit "J"**) to the extent that the Grower has applied the minimum amount of water necessary in order to produce a normal crop. The Grower has implemented this strategy by careful observation of the orchard for signs of water stress, tree health, and other indicators and purchasing/applying water as necessary. The concept of Deficit Irrigation strategy is to maximize the production achieved per acre foot of water rather than attempting to achieve maximum potential production for the crop based on an assumption of unlimited water resources. The economies of Deficit Irrigation are sensible and constitute "good farming practices" in a drought year.

(AR 269-70.) Plaintiff also provides a calculation concluding that 3.94 acre-feet of water was applied to the orchard in 2014:

> 2014 PG&E = 347,360 KWH ÷ avg $110/kwh = 568.24 ac/ft
> 2014 Water District (Purchased Water) = 83 ac/ft
>
> Total applied water = 568.24 + 83 = 651.24 ac/ft ÷ 194 acres = 3.36 ac/ft
> Add rainfall: 3.36 ac/ft applied + .58 ac/ft precipitation (CIMAS #7)
>
> TOTAL WATER AVAILABLE TO ORCHARD CY 2014: **3.94 ac/ft.**

(AR 270.) Plaintiff highlights that this number equates to 90% of the 4.36 figure cited by RHIS, which is an average for a non-drought year. (Id.) Plaintiff also notes that the orchard's soil is primarily sandy loam and has a high clay content which retains more water at the tree root levels, and therefore less water is necessary than for an orchard with a more porous soil content. (Id.)

a. Plaintiff's August 29, 2016 Letter to RMA with Expert Declarations

On August 29, 2016, after RMA granted Plaintiff an extension of time to provide expert materials, Plaintiff submitted declarations in support of his request for reconsideration. (AR 279-81.) The August 29, 2016 letter states that it attaches declarations from: 1) Scott Nagra, Plaintiff's son, "regarding personal observations of the orchard and past production;" 2) Larry Maddox, PCA/CCA; and 3) Daniel Stewart, PCA/CCA.[4] (AR 279.)

Plaintiff's son, Scott Nagra ("Mr. Nagra"), generally attests that he "personally assisted with farming of the orchard in 2014 and 2015," that he is "aware of all watering schedules for 2014-2015," that Plaintiff and Mr. Nagra "did a post-harvest irrigation after the 2014 harvest,"

[4] The Court notes that the declaration from Daniel Stewart does not appear in the Administrative Record, nor do the parties address the absence of such declaration in their submitted papers.

that "[j]ust prior to the blossom drop reported for 2015, there was unusual heat," and that "[t]he trees were not showing any signs of stress." (AR 280.) Mr. Nagra also declares he is not sure where RHIS "came up with the number . . . for water to be applied to almond orchards," and notes that the "clay content in the soil of [the] orchard is high and retains water well." (Id.) Mr. Nagra concludes that his "dad has always followed the recommendations of [the] PCA and strived to employ the best farming practices and [knows] he was buying some supplemental water in 2015 at high prices to ensure the trees received adequate water." (Id.)

In the first page of Larry Maddox's ("Mr. Maddox") declaration, the expert notes generally that he has worked observing the orchard and advising Plaintiff since late crop year 2010. (AR 281.) Mr. Maddox "recall[s] remarking to Kewal Singh early in crop year 2015 that it seemed like he was spending money right and left on that orchard and that the crop did not justify the money he was spending due to so much crop damage that early hot spells caused," and states Plaintiff "replied that he always wanted to everything [sic] possible to do the best for the orchard even if it was not producing much crop that year." (Id.) Mr. Maddox states that "in February and March 2015 Mr. Singh's orchard suffered extensive blossom drop and crop drop due to unusual and excessive heat that occurred during that time period." (Id.) Mr. Maddox also states that "after the completion of the 2014 crop year harvest, there were numerous and substantial rains until early 2015, so the orchard had ample post harvest water available for irrigation purposes . . . [and Plaintiff] is fortunate, because, in addition to district water and rainfall, he has an excellent pump and well for supplemental water." (Id.)

The second page of the Maddox Declaration is not contained in the Administrative Record.[5] Here, Mr. Maddox states that pertaining to the crop years 2014, 2015, and 2016, he reviewed the PG&E water pump bills, the water district bills relating to purchased water, in addition to the California Irrigation Management Information System ("CIMIS") temperature

[5] In his moving papers, Plaintiff notes the second page of the Mr. Maddox's declaration and his resume do not appear in the record, which Plaintiff maintains were in fact submitted to RMA. (Mem. P. & A. Supp. Pl. Mot. Summ. J. ("Pl. MSJ") 8, ECF No. 21-1.) Plaintiff attaches the second page of the declaration and the resume to his moving papers. (Decl. Tracy A. Agrall Supp. Pl. Mot. Summ. J. ("Agrall Decl.") Ex. B, at 85-86, ECF No. 21-2.) The Court notes that Larry Maddox's declaration is unsigned. (Id. at 85.)

and rainfall data for 2015. (Agrall Decl. Ex. B., at 85.) Mr. Maddox generally declares that he "agree[s] with [Plaintiff's] statement that water available to the trees in crop year 2015 was 3.94 acre feet of water including (a) 568.24 acre feet of well water, (b) 83 acre feet of purchased District Water and .58 acre feet of rain." (Id.) In his "opinion, there was ample water available to care for the trees and carry a normal crop to harvest time." (Id.) Mr. Maddox disputes RHIS's position that almond trees with micro sprinkler irrigation systems require 4.36 acre-feet of water and argues that RHIS "overlooks the fact that 50% of the Singhs' orchard is irrigated via double line drip, which uses less water than micro-misters." (Id.) Mr. Maddox concedes that the figure may be a reasonable estimate as a generalized non-drought year figure, but "is not consistent with the practices of most farmers in the Westlands Water District in the past drought years," and when considering Plaintiff's sandy loam soil retains water well. (Id.)

Mr. Maddox concludes based on the "water information" he reviewed, that Plaintiff's "orchard had 3.94 acre feet of water available to the trees in 2014 in preparation for the 2015 crop year, which was 90.3% of the generalized non-drought number stated by [RHIS]," and that in his "lengthy experience with almond farming, and particularly [his] experience with this area during the recent drought, [Plaintiff] applied sufficient water to his trees such that they would have produced a full crop but for the blossom and crop drop due to excessive heat so early in the 2015 crop year." (Id.)

b. Plaintiff's September 21, 2016 Email to RMA Explaining Water Calculation

In response to RMA's request for a "further breakdown of the 'steps' taken in calculating the well water," Plaintiff's counsel issued an email to RMA on September 21, 2016. (AR 274.) The email noted that "[o]ur experts reviewed all of the underlying water and PG&E data as well as the CIMIS rainfall data and agreed with the calculations presented in the appeal letter." (Id.) Plaintiff explained that the first step was to take the figures in the utility bill and convert the kilowatts per hour to acre-feet of water:

> $62,517.46 is the total paid to PG&E for the applicable well water being pumped. The dollars paid for KWH are converted to acre feet of water as follows.
>
> $110 is the average cost to pump an acre foot of water. This assumption is provided by the farmer based on prior PG&E bills for this ranch and similar

> ranches and observations of water in the field. This assumption took into consideration a breakdown of off-peak, on-peak, and part-peak water which was separately calculated from the PG&E billings. E.g. approximately 76% of the water was pumped during off-peak hours.
>
> *The two experts that submitted declarations reviewed all underlying data and this assumption and agreed that the calculation was reasonable.*
>
> $62,517.46/$110 = 568.24 acre feet of water.

(Id.) Next, Plaintiff added eighty-three (83) acre-feet of water, a figure provided directly from the water district, and then converted the total acre-feet of water to a per-acre figure:

> ADD: 568.24 acre feet of well water
> ADD: 83.00 acre feet of district water
> TOTAL: 651.24 acre feet of applied water
> DIVIDED by 194 acres
> = **3.36 (rounded) acre feet on a per-acre basis** . . .

(AR 274-75.) Finally, Plaintiff added the reported rainfall figure of .58 acre-feet to obtain a final calculation of 3.94 acre-feet of water per acre. (Id.)

The September 21, 2016 email to RMA was the last communication between the parties prior to RMA making its GFP determination, outlined in the next subsection.

4. RMA's Good Farming Practices Determination

On October 13, 2016, RMA upheld RHIS's denial of Plaintiff's claim. (AR 522-28.) The RMA GFP letter summarized the determination:

> RMA agrees with the AIP's decision that you failed to follow GFP by not applying irrigation water to the 194.0 acre block of almonds at appropriate times and amounts in the 2014 crop year that impacted the 2015 crop. Using an industry accepted method (see Good Farming Practice Determination for details), we calculated that in 2014, 2.36 acre feet per acre (AF/acre) of water was applied to the 194.0 acre almond block. In addition, the area received 6.96 inches of rain or 0.58 feet. This amounts to 2.94 AF/acre for the 2014 crop year. Based on the literature reviewed (Exhibits E.1, E.2, and E.3), this amount falls short of the basic water requirements for almonds. The literature recommends 43 - 54 inches per acre (3.6-4.5 AF/acre) be applied.

(AR 523.) In coming to its determination, RMA states that it referred to the following sources of information: 1) documentation put forth by RHIS and Plaintiff, including irrigation information provided by CIMIS; 2) applicable handbooks and provisions; 3) a UC Davis research article entitled "Regulated deficit irrigation reduces water use of almonds without affecting yield;" 4) the National Center for Appropriate Technology's ("NCAT") Microirrigation Pocket Guide; and

4) an article entitled "Irrigation Management for Almond Trees Under Drought Conditions," published by a water management specialist with U.C. Davis. (AR 525.)

RMA's determination addressed three areas of contention between RHIS and Plaintiff: 1) that Plaintiff's irrigation well was not operating during winter and spring months; 2) that almond trees require 4.36 acre-feet of water per acre; and 3) a lack of proper irrigation in 2014 led to Plaintiff's crop failure in 2015. RMA highlights that the "key question and subject" of the GFP determination was "whether or not adequate irrigation was applied in 2014." (AR 523.) RMA's determination is outlined in the following subsections.

a. Whether the Irrigation Well was Operational during Winter and Spring

As for the issue of whether Plaintiff's irrigation pump was running during the winter and spring months, RMA found that it "cannot determine whether the pump was running or not and the issue did not influence the determination." (AR 525, 527.)

b. Whether Almond Trees Require 4.36 Acre Feet of Water

RMA upheld the "RHIS determination that, in order to have full production, the water requirement for almonds is 4.36 AF/acre," however, RMA also noted that the "literature reviewed does support that 3.6 – 4.5 AF/acre is required to the [sic] meet water demands for almonds." (AR 527.) Specifically, RMA found that based on the literature reviewed, even using deficit irrigation methods, almond crops require more than 2.94 acre-feet per acre, and irrigation at the level of 2.94 acre-feet per acre would not satisfy the definition of "irrigated practice" contained in the Common Crop Insurance Policy Basic Provisions, defined as a method of crop production where "water is artificially applied during the growing season by appropriate systems and at proper times, with the intention of providing the quantity of water needed to produce at least the yield used to establish the irrigated production guarantee or amount of insurance on the irrigated acreage planted to the insured crop." (AR 525-26.)

c. Whether there was a Lack of Proper Irrigation in 2014

RMA upheld RHIS's determination that Plaintiff "did not follow good farming practices by not applying proper irrigation during 2014." (AR 527.) RMA highlighted the relevant portions of the 2013 Document and Supplemental Standards Handbook ("DSSH"), which

required insured individuals to: "document and/or demonstrate good irrigation practices, showing the application of adequate water in an acceptable manner at the proper times to allow for normal crop production, measured as the Approved APH yield for the unit." (AR 526.)

RMA calculated Plaintiff's well water irrigation in 2014 by using the formula contained in the NCAT Microirrigation Pocket Guide. (Id.) The NCAT formula is: Gross application of water (in acre inches per acre) = (GPM × Hours) ÷ (450 × Number of Acres). (AR 504, 526.)

RMA obtained the 1,500 GPM (Gallons Per Minute) figure from Plaintiff's Pre-Acceptance Perennial Crop Inspection Report (PAIR). (AR 245, 526.) RMA utilized the PG&E utility report to derive the figure that Plaintiff's irrigation pump ran for 1,349 hours in 2014. (AR 277, 526.) Plaintiff's almond orchard encompassed a total of 194 acres. (AR 246, 526.) RMA entered these numbers into the NCAT formula to determine the amount of irrigation Plaintiff's orchard received from the well during the relevant time period.

First RMA calculated: (1,500 × 1,349) ÷ (450 × 194) = 23.2, apparently rounded from 23.1786941. (AR 526.) RMA then divided 23.2 by 12 to convert inches to feet: 23.2 ÷ 12 = 1.93, apparently rounded from 1.9333333. (Id.) RMA then multiplied 1.93 by 194 (the total acres): 1.93 × 194 = 374.7.[6] (AR 526-27.) RMA thus concluded that 374.7 acre-feet of water from Plaintiff's well was applied to the orchard. (AR 527.)

Next, RMA added 83 acre-feet of surface water bought from the water district, and 0.58 acre-feet of rain that fell in the area: 374.7 + 83 = 457.7, and 457.7 + 0.58 = 458.3, apparently rounded from 458.28. (Id.) Thus, RMA calculated that a total of 458.3 acre feet of water was provided to the orchard in the 2014 crop year via both irrigation and rainfall. (Id.)

RMA then divided that number by the 194-acre figure to calculate acre-feet of water per acre: 458.3 ÷ 194 = 2.94 acre-feet per acre.[7] (Id.) RMA concluded that 2.94 acre-feet per acre

[6] The Court notes that, in fact, 1.93 × 194 = 374.42.

[7] Both the Court and the Defendant note that, in fact, 458.3 ÷ 194 = 2.36, rounded. (Mem. P. & A. Opp'n. Pl. Mot. Summ. J. & Supp. Def. Cross-mot. Summ. J. ("Def. Opp'n") 12, ECF 22.) The Court also notes that if the correct calculation of 1.93 × 194 was utilized (i.e. 374.42 noted above), the calculation would still result in 2.36, when rounded. The Defendants in their opposition highlight that RMA's miscalculation between 2.36 versus 2.94 actually favors Plaintiff in the amount of water calculated to have been applied to the orchard through irrigation and rainfall in the 2014 year. (Def. Opp'n at 12; AR 527.) In its determination, RHIS calculated a figure of 2.36 ac/ft for 2014, based on irrigation information provided by Plaintiff. (Def. Opp'n at 12; AR 287.)

was applied, and noted that "[t]his is likely the same method that RHIS used to calculate the water amount applied, however, they did not include rainfall." (Id.)

It is RMA's October 13, 2016 good farming practices determination that is the focus of the Court's review in this matter. The applicable legal standards pertaining to review of this determination under the APA and the Federal Crop Insurance Act are explained in the following section.

III.

LEGAL STANDARD

A. Judicial Review under the Administrative Procedure Act

The Administrative Procedure Act guides judicial review of agency actions. An agency decision or finding of fact may be reversed if it is found to be "arbitrary, capricious, [or] an abuse of discretion," or "unsupported by substantial evidence." Spencer Enterprises, Inc. v. United States, 345 F.3d 683, 693 (9th Cir. 2003) (quoting 5 U.S.C. § 706) (alteration in original). The standard of review under section 706 is narrow, and the district court may not substitute its judgment for that of the agency. Northwest Motorcycle Ass'n v. U.S. Dep't of Agric., 18 F.3d 1468, 1471 (9th Cir. 1994) (citing Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983)); see also Arizona Cattle Growers' Ass'n v. U.S. Fish & Wildlife, Bureau of Land Mgmt., 273 F.3d 1229, 1243 (9th Cir. 2001) ("The arbitrary and capricious test is a narrow scope of review of agency factfinding . . . [t]he court is not empowered to substitute its judgment for that of the agency.") (citations omitted).

However, the district court "must conduct a searching and careful inquiry into the facts." Northwest Motorcycle Ass'n, 18 F.3d at 1472 (citing Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 416 (1971)). The district court must ensure that the agency "examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.' " 463 U.S. at 43 (quoting Burlington Truck Lines v. United States, 371 U.S. 156, 168 (1962)). The district court's function "is to determine whether or not as a matter of law the evidence in the administrative record permitted the agency to make the decision it did," and "summary judgment is an appropriate mechanism

for deciding the legal question of whether the agency could reasonably have found the facts as it did." City & Cty. of San Francisco v. United States, 130 F.3d 873, 877 (9th Cir. 1997) (quoting Occidental Eng'g Co. v. INS, 753 F.2d 766, 769-70 (9th Cir.1985)).

Therefore, the key inquiry is whether the agency's decision is "founded on a rational connection between the facts found and the choices made [by the agency] and whether it has committed a clear error of judgment." Arizona Cattle Growers' Ass'n v. U.S. Fish & Wildlife, Bureau of Land Mgmt., 273 F.3d 1229, 1243 (9th Cir. 2001). "As long as the agency decision was based on a consideration of relevant factors and there is no clear error of judgment, the reviewing court may not overturn the agency's action as arbitrary and capricious." Id. at 1236 (citing Amer. Hosp. Ass'n v. NLRB, 499 U.S. 606 (1991); Citizens to Preserve Overton Park, Inc., 401 U.S. 402 (1971)).

The district court is required to be "deferential to the agency's expertise in situations . . . where 'resolution of this dispute involves primarily issues of fact,' . . . [and where] 'analysis of the relevant documents requires a high level of technical expertise, [the Court] must defer to the informed discretion of the responsible federal agencies.' " Id. (first quoting Marsh v. Or. Natural Res. Council, 490 U.S. 360, 377 (1989); then quoting Central Ariz. Water Conservation Dist. v. EPA, 990 F.2d 1531, 1539–40 (9th Cir.1993) (internal quotation marks omitted)). However, "[t]he deference accorded an agency's scientific or technical expertise is not unlimited." Brower v. Evans, 257 F.3d 1058, 1067 (9th Cir. 2001).

As a general matter, subject to some limited exceptions, the APA limits the scope of judicial review to the administrative record. 5 U.S.C. § 706 (directing the court to "review the whole record or those parts of it cited by a party"); Fla. Power & Light Co. v. Lorion, 470 U.S. 729, 743–44 (1985) ("The task of the reviewing court is to apply the appropriate APA standard of review . . . to the agency decision based on the record the agency presents to the reviewing court."). As this case involves review of a final agency determination under the APA, resolution of this matter does not require fact finding and this court's review is limited to the administrative record. Northwest Motorcycle Ass'n v. U.S. Dep't of Agric., 18 F.3d 1468, 1472 (9th Cir. 1994).

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B. The Federal Crop Insurance Program

"The Dust Bowl's awful destruction not only motivated *The Grapes of Wrath*, but also spurred Congress to 'authorize[ ] federal crop insurance as an experiment to address the effects of the Great Depression and crop losses seen in the Dust Bowl.' " United States v. Torlai, 728 F.3d 932, 934–35 (9th Cir. 2013) (alteration in original) (quoting Dennis A. Shields, Cong. Research Serv., R40532, Federal Crop Insurance: Background 1 (2012)). The Federal Crop Insurance Act ("FCIA") was enacted "to promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance and providing the means for the research and experience helpful in devising and establishing such insurance." 7 U.S.C. § 1502(a).

The Defendant, FCIC, is a federal government-owned corporation within the USDA that was created to "carry out the purposes" of the FCIA. 7 U.S.C. § 1503; 31 U.S.C. § 9101(3). The RMA is an agency within the USDA charged with supervision of the FCIC, and with administration and oversight of the FCIA. 7 U.S.C. § 6933. Pursuant to the FCIA, the FCIC is authorized to act as a reinsurer to approved insurance providers ("AIPs"). 7 U.S.C. § 1508. An AIP is "a private insurance provider that has been approved by [FCIC] to provide insurance coverage to producers participating in the Federal crop insurance program established under this subchapter." 7 U.S.C. § 1502(b)(2).

The FCIA provides that coverage "shall not cover losses due to . . . the failure of the producer to follow good farming practices, including scientifically sound sustainable and organic farming practices." 7 U.S.C. § 1508(a)(3)(A)(iii). The regulations define "good farming practices" as:

> The production methods utilized to produce the insured crop and allow it to make normal progress toward maturity and produce at least the yield used to determine the production guarantee or amount of insurance, including any adjustments for late planted acreage, which are those generally recognized by agricultural experts or organic agricultural experts, depending on the practice, for the area.

7 C.F.R. § 457.8; see also 7 C.F.R. § 400.90 ("agricultural commodities insured under the terms contained in 7 CFR part 457 and all other crop insurance policies authorized under the Act, except as provided herein, means the good farming practices as defined at 7 CFR 457.8."). The

Common Crop Insurance Policy is a standard policy that is used by AIPs and producers under the reinsurance program. 7 C.F.R. § 457.8. The Common Crop Insurance Policy protects against "unavoidable, naturally occurring events," however other causes of loss, such as the "[f]ailure to follow recognized good farming practices for the insured crop," are not covered. 7 C.F.R. §457.8.

Either the AIP or the agency can make an initial GFP determination, however if issued by the AIP, the insured cannot file suit against the AIP. 7 C.F.R. § 400.98(e); 7 C.F.R. § 440.91(a)(2). Whether the agency or the AIP makes the determination, the insured must seek reconsideration under § 400.98 before bringing suit against FCIC in a United States District Court. 7 C.F.R. § 400.98(e). Once the agency issues its GFP reconsideration determination, the producer can seek judicial review, and such determination cannot be reversed or modified unless the determination is found to be arbitrary or capricious. 7 U.S.C. § 1508(a)(3)(B)(iii); 7 C.F.R. § 400.98)(f).

IV.

ANALYSIS & DISCUSSION

A. Plaintiff's Arguments in Favor of Summary Judgment

First, Plaintiff argues RHIS's investigation set off on the wrong foot. Approximately a month before the heat event, the Pre-Acceptance Perennial Crop Inspection Report Extender dated March 8, 2015, includes the remark that the "orchard looks ok with nice vigor . . . overall a pretty good orchard with adequate water supply." (Pl. Reply Br. Supp. Pl. Mot. Summ. J. & Resp. Def. Cross-mot. Summ. J. ("Pl. Reply") 1, ECF No. 23; AR 247 (capitalization altered).) After Plaintiff filed his claim, "[r]ather than focusing on the heat, which could also explain the condition of the trees, RHIS start[ed] down the water path to deny the claim." (Pl. Reply at 2.) Plaintiff directs the Court's attention to the fact that in RHIS's original denial letter dated April 29, 2016, RHIS incorrectly asserted that Plaintiff's well was not operating during the winter and spring months, despite them being operational during this time as demonstrated by Plaintiff's energy billing statements. (Id.) RHIS then "pursued the lack of water theory and ma[de] blanket statements concerning Plaintiff's water usage, all without support." (Id.)

Second, Plaintiff contends that neither RHIS nor RMA ever provided a basis for the determination that almond trees utilizing micro sprinklers require the annual application of 4.36 acre-feet of water per acre, and that such number is not located anywhere in the Administrative Record. (Pl. MSJ at 7.) In Plaintiff's request for a GFP determination (AR 9), he speculated as to the basis for the number, referring to a table for Shafter "Historic" ETo table, and argued that this "generalized number" does not take into consideration the area where the subject orchard is located, the soil type, or average water application of farms in the same approximate locality. (Pl. MSJ at 7; Pl. Reply at 2.) Plaintiff argues the 4.36 figure is only an average for non-drought years, and not suitable for a case-by-case determination, and Plaintiff therefore requested RMA to consider these other factors that he argues are highly relevant to the determination. (Pl. MSJ at 7; Pl. Reply at 2.) Plaintiff states that the California Microirrigation Pocket Guide used by RMA in its determination supports Plaintiff's argument that such factors are relevant, because the publication notes that the irrigation tables are "average values" and "may need to be adjusted your [sic] for local climate, soil texture, current weather conditions and other factors." (Id.) Plaintiff argues that despite this evidence and factors presented by Plaintiff, the agency decision accepts "without question or authority, the assertion that almond trees require 4.36 AF/acres of water." (Pl. MSJ at 8.)

Finally, Plaintiff argues that despite providing RMA with his own calculation demonstrating that the water available to the orchard in 2014 exceeded the lower end of the range cited by RMA, the agency "rejected the information as it could not confirm if the method used was accurate," and "[r]ather than seeking clarification, RMA simply disregarded the information." (Id.) Plaintiff's September 21, 2016 letter to RMA explains that the calculation is based on an average cost of $110.00 to pump an acre-foot of water, an "assumption [] provided by the farmer based on prior PG&E bills for [his] ranch . . . similar ranches . . . [and] observations of water in the field." (AR 274.) Plaintiff contends the $110.00 assumption is valid because it is based on an analysis by the Plaintiff, who established the orchard in 1996 with direct experience over eighteen years, in addition to confirmation from declarants who "reviewed all underlying data and this assumption and agreed that the calculation was reasonable." (Pl.

Reply at 3.) Plaintiff maintains his calculation is verifiable through review of the PG&E billing records yet "RMA took no steps to request these billings to confirm the calculation and validate Plaintiff's method." (Id.) Instead, RMA disregarded these facts and used materials unrelated to Plaintiff's ranch to make its determination, an arbitrary action. (Id.)

B. Defendant's Arguments in Favor of Summary Judgment

As to the amount of water required by the almond orchard, Defendant argues that although RMA upheld RHIS's use of the 4.36 figure, RMA did not rely solely on that number in its determination, but rather noted that the agricultural literature supported a range of 3.6 to 4.5 acre-feet of water per acre. (Def. Opp'n at 9; AR 346, 527.) Defendant maintains that Plaintiff endorses this range as Plaintiff's calculation of 3.94 acre-feet per acre in 2014 would put his water use within the acceptable grange. (Def. Opp'n at 9, quoting P. MSJ at 7 ("[t]his range is extremely important to the determination," because Plaintiff's calculation was "within an acceptable range").)

Defendant argues that RMA made its calculation of the available water in 2014 by utilizing a formula recognized in agricultural literature, and water pumping figures documented in the record before the agency. (Def. Opp'n at 11.) These specific figures include the 1,349 hours the pump operated documented in the PG&E utility report for 2014 (AR 277), and the 1,500 gallons per minute pumping capacity of the well documented in the Pre-Acceptance Perennial Crop Inspection Report signed by Plaintiff (AR 245). (Def. Opp'n at 11.) RMA then entered these numbers into the formula referenced in the "California Microirrigation Pocket Guide" published by the National Center for Appropriate Technology. (Id.; AR 504, 526-27.) Although Defendant concedes that RMA's calculation contained a mathematical error, the error favored Plaintiff and mistakenly credited him with more irrigation than an accurate calculation would have. (Def. Opp'n at 2.)

As for Plaintiff's effort to convince RMA to use his alternate calculation, Defendant argues RMA declined to adopt the calculation because it was grounded upon an unsupported assumption regarding the average cost to pump an acre-foot of water, a "variable that is the key to the entire calculation . . . [that] is without any evidence to support it." (Def. Opp'n at 2, 10.)

Defendant maintains that despite Plaintiff carrying the burden under the insurance policy guidelines to document or demonstrate good irrigation practices, Plaintiff relies on a faulty calculation without directing the Court to any evidence in the record to support it, "apart from the unsigned declaration of a crop adviser who simply accepted the calculation without further support or elaboration." (Def. Opp'n at 10; Def. Reply at 4.) Despite Plaintiff's contention that RMA only needed to review the PG&E billing records in order to confirm the $110.00 assumption, which are part of the record (AR 277), Defendant argues that Plaintiff fails to "explain how RMA could have used this information to confirm Singh's assumption . . . and it is not apparent from the document how the PG&E bill could be used for that purpose." (Def. Reply at 4.)

Defendant rejects the accusation that RMA disregarded and failed to seek clarification regarding Plaintiff's calculation, highlighting the fact that "RMA *did* seek clarification from Plaintiff about how his water use was calculated, but the clarification did not provide information that RMA could confirm." (Def. Opp'n at 11.) RMA's October 13, 2016 determination letter states that RMA "also requested additional information on how the [water figure] was calculated. We received a response [the September 21, 2016 email from Plaintiff to RMA] but we could not confirm if the method used was accurate." (Def. Opp'n at 11; AR 525.)

Defendant maintains that RMA's good farming practices determination was rational, reasonable, and supported by the record, while Plaintiff's proposed calculation and formula was not, and therefore Plaintiff fails to establish that RMA's action was arbitrary, capricious, or an abuse of discretion. (Def. Opp'n at 2.)[8]

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[8] The Court also considered Defendant's argument that if a heat event was in fact the cause of the low crop yield in 2015 as Plaintiff argues, then the neighboring orchard should have exhibited similar symptoms of distress. (Def. Reply at 2.) On June 12, 2015, the RHIS claims adjuster noted that it "looks like [Plaintiff's] trees haven't had water for some time . . . a lot of trees are dying." (AR 341 (capitalization altered).) Defendant highlights that photographs taken by the adjuster shortly thereafter on June 18, 2015, show that the neighboring orchard appeared to be in healthy condition, whereas the almond trees within Plaintiff's orchard looked dry and stressed. (Def. Reply at 2; AR 338-39.)

While the dissimilar appearance of the two orchards lends some circumstantial support to a determination that a heat event was not the cause of distress to Plaintiff's orchard, this evidence is not the type that the Court can draw a definitive conclusion from. A variety of factors not apparent from the picture, nor other documentation in the record, may have impacted the disparate condition of the two orchards at the point in time that the photograph was taken. For example, the Court notes that the photograph was taken over two months after Plaintiff filed his

C. The Court's Review of RMA's Good Farming Practices Determination

Whether or not RHIS set off on the wrong investigational footing or made mistakes in its denial of Plaintiff's claim is not before the Court, but rather RMA's good farming practices determination in relation to RMA's affirmance of the insurance denial. RMA's good farming practices determination addressed three areas of contention between RHIS and the Plaintiff: 1) whether Plaintiff's irrigation well was not operating during winter and spring months; 2) what amount of water almond trees require; and 3) whether a lack of proper irrigation in 2014 led to the crop failure in 2015. These issues are reviewed by the Court in turn.

1. Good Farming Practices Determination Issue No. 1 - Whether Plaintiff's Irrigation Pump was Operating During Winter and Spring Months

As to the issue of whether Plaintiff's irrigation pump was running during the winter and spring months, RMA found that it "cannot determine whether the pump was running or not and the issue did not influence the determination. (AR 525, 527.) Because this issue did not impact RMA's ultimate decision, it is not relevant to the instant cross-motions.

2. Good Farming Practices Determination Issue No. 2 - Water Requirement for Almond Crops

First, Plaintiff's argument that neither RHIS nor RMA ever provided a basis for the determination that almond trees utilizing micro sprinklers require the annual application of 4.36 acre-feet of water per acre, and that the source of the number is not located anywhere in the Administrative Record, is without merit. (Pl. MSJ at 7.) It appears that Plaintiff's "speculat[ion]" that the insurance company obtained the 4.36 figure from the California

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insurance claim, and therefore it is possible that the blossom drop and low crop yield that first became apparent in the spring altered Plaintiff's irrigation strategy after the claim was filed, resulting in the appearance of the orchard at that time. Additionally, factors such as the age of the trees, or a particular fertilization strategy employed by the neighboring farmer, may account for the difference. On the other hand, as Defendant argues, it is equally plausible that the comparatively dry appearance of the Plaintiff's trees was in fact due to the failure to apply adequate water in 2014 and tending of the orchard. Overall, whether, the heat event, a lack of irrigation, or other factors resulted in the appearance of the trees in the photograph was not considered by the agency in making its good farming practices determination. While the agency "carefully reviewed the RHIS decision file" and "utilized documentation put forth by" RHIS (AR 522, 525), RMA did not explicitly rely on or cite to the insurance adjuster photographs in making its determination. Rather, RMA's review focused on determining the appropriate range of water required for almond trees based on the scientific literature for that agricultural region, and calculating the amount of irrigation applied based on the data specific to Plaintiff's orchard contained in the record. (AR 525-27.)

Irrigation Management Information System's evapotranspiration ("ET") table, is correct. (Pl. MSJ at 7; AR 293-94.) The table has varying figures corresponding to the stage of growth of the almond orchard, with the 4.36 figure derived from the column pertaining to mature almond trees. (AR 293-94.) The 4.36 figure is handwritten in, calculated by dividing the 52.27-inch figure contained in the table by twelve, to convert to water per acre-foot. (Id.)

Second, while RMA may have upheld the use of the 4.36 figure as part of RHIS's overall decision, RMA's GFP determination did not rely on this figure as the sole authority on the issue. RMA's determination focused on whether the amount of water calculated to have been available to the orchard in 2014 was sufficient under either the 4.36 figure, or the range supported by the scientific literature it reviewed. RMA upheld RHIS's decision that Plaintiff failed to follow good farming practices by not applying sufficient irrigation water, finding that "[b]ased on the literature reviewed . . . this amount falls short of the basic water requirements for almonds. The literature recommends 43 - 54 inches per acre (3.6 – 4.5 AF/acre) be applied." (AR 523.) In coming to its determination, RMA noted that it utilized documentation from RHIS and Plaintiff, including irrigation information from CIMIS, a U.C. Davis research article entitled "Regulated deficit irrigation practices reduces water use of almonds without affecting yield," the NCAT Microirrigation Pocket Guide, and "Irrigation Management for Almond Trees Under Drought Conditions." (AR 525.)

The Court notes that it is not abundantly clear precisely where RMA derived the range of acceptable water availability from the scientific literature. The 2011 U.C. Davis article (AR 345-51), states that the "current basis for estimating the irrigation need of a crop is to combine the water lost from the soil (evaporation) with the water lost through leaves (transpiration), into an overall loss, the crop evapotranspiration (ET_c)." (AR 346.) In the 2011 article, the authors note that research in the 1980s and 1990s estimated the average ET_c for almonds as 40 to 42 inches (3.3 to 3.5 feet), and more recent research showed an average ET_c of 48 to 54 inches (4 to 4.5 feet). (AR 346.) It appears that the agency derived the upper figure of the range, 4.5 acre-feet per acre, from this ET_c figure of 48 to 54 inches (4 to 4.5 feet). (Id.)

The 2011 article outlined a study using regulated deficit irrigation. Table 1 entitled

"[a]verage estimate of consumptive water use in control and regulated deficit irrigation (RDI) treatments, 2005-2008," noted an average consumptive water use of 43.1 inches, or approximately 3.6 feet, rounded. (AR 349.) The 43.1 inches of consumptive water use contained in Table 1 appears to be where the agency derived the 3.6 acre-feet per acre figure, the lower end of what it determined to be the acceptable range of water requirement for almond orchards in the region. (AR 349.)

Table 1's figure of 43.1 inches is the sum of 34.5 inches of seasonal water applied, 4.1 inches of seasonal precipitation, and 4.5 inches from "[c]ontribution from soil storage." (AR 349.) The Court notes that if the contribution from soil storage is not included, the resulting figure would be 38.6 inches, or 3.22 acre-feet per acre, rounded. The Court notes that the "[m]odeled ET_c" for the regulated deficit irrigation study group shows a figure of 44.4 inches, or 3.7 feet. (AR 349.) The Court also notes that Table 2 shows the test orchard's lowest level of consumptive water use was 34.6 inches (2.88 feet) for the year 2005. (AR 349.)

The California Microirrigation Pocket Guide contains a table of historical evapotranspiration levels for almonds in a number of California regions: Modesto, Williams, Parlier, Madera, Red Bluff, Visalia, Woodland, and Bakersfield. (AR 372.) The publication notes that the table provides "only average values for mature trees and vines without a cover crop, and may need to be adjusted for your local climate, soil texture, current weather conditions, and other factors." (AR 371.) The ET levels cited range from 37.90 inches (3.16 feet rounded), to 43.44 inches (3.62 feet). (AR 372.) The Court notes that this table only encompasses the time period of March 16 through November 15, and therefore does not appear to be representative of the water requirements for the entire year. (AR 372.)

The remaining article cited by RMA in its determination is "Irrigation Management for Almond Trees under Drought Conditions," authored by Terry L. Prichard, a Water Management Specialist with U.C. Davis. (AR 518.) The article does not contain detailed figures pertaining to water requirements in the precise region of Plaintiff's almond orchard, however describes "[a]lmond trees in the Northern Sacramento Valley require about 37 inches [3.08 feet, rounded] of water in an average year of full, unrestricted water use." (AR 519.) The article also includes

a graphical representation comparing a fully irrigated almond crop versus a deficit irrigated crop, and notes that the "deficit irrigated orchard used 27 inches [2.25 feet] of water or about 30 percent less than the full potential orchard." (AR 519.) The graph's date range spans from March 16, through November 15, and therefore does not appear to be representative of the water requirements for the entire year. (AR 519.) The Court notes the article also states that "[f]or maximum growth, yield, crop quality and orchard longevity, almonds [sic] trees should receive a full water requirement." (AR 518.)

Upon review of the scientific literature cited by RMA in making its determination of the appropriate range of required water for the almond orchard, the Court finds "the evidence in the administrative record permitted the agency to make the decision it did," and "the agency could reasonably have found the facts as it did." City & Cty. of San Francisco v. United States, 130 F.3d 873, 877 (9th Cir. 1997) (quoting Occidental Eng'g Co. v. INS, 753 F.2d 766, 769-70 (9th Cir.1985)). The Court cannot overturn the determination as arbitrary and capricious as RMA's "decision was based on a consideration of relevant factors and there is no clear error of judgment." Arizona Cattle Growers' Ass'n v. U.S. Fish & Wildlife, Bureau of Land Mgmt., 273 F.3d 1229, 1243 (9th Cir. 2001) (citing Amer. Hosp. Ass'n v. NLRB, 499 U.S. 606 (1991); Citizens to Preserve Overton Park, Inc., 401 U.S. 402 (1971)).

While a different range of the level of water required for almond trees in the region could plausibly be derived from the scientific literature in the record, the Court finds the range cited by RMA to be sufficiently supported by the record. The agency appears to have made a reasonable determination based on the figures in the scientific literature.

"The deference accorded an agency's scientific or technical expertise is not unlimited." Brower v. Evans, 257 F.3d 1058, 1067 (9th Cir. 2001). However, the Court must defer to the agency on matters within the agency's expertise, unless the agency completely failed to consider a factor which was essential to making an informed decision. Nat'l Wildlife Fed'n v. NMFS, 422 F.3d 782, 798 (9th Cir. 2005). The Court's deference is heightened where "analysis of the relevant documents requires a high level of technical expertise," and the Court "must defer to the informed discretion of the responsible federal agencies." 273 F.3d at 1236 (quoting Central

Ariz. Water Conservation Dist. v. EPA, 990 F.2d 1531, 1539–40 (9th Cir.1993)).

Although the scientific literature may allow for a different interpretation of the data, RMA's decision is reasonably based on the scientific data contained in the record, and the Court must defer to analysis grounded within the area of the agency's expertise. The agency's decision need not be the only reasonable interpretation of the evidence, nor does the Court have to find that it would have reached the same decision had it evaluated the evidence in the first instance. Unemployment Comp. Comm'n of Alaska v. Aragon, 329 U.S. 143, 153 (1946). The Court "may not substitute its judgment for that of the agency concerning the wisdom or prudence of the agency's action." San Joaquin River Grp. Auth. v. Nat'l Marine Fisheries Serv., 819 F. Supp. 2d 1077, 1083 (E.D. Cal. 2011) (quoting River Runners for Wilderness v. Martin, 593 F.3d 1064, 1070 (9th Cir. 2010)).

Additionally, Plaintiff appears to accept this range as appropriate, as he states in his moving papers that "[a]s noted in the RMA determination letter, the required amount of water ranges from 3.6 – 4.5" acre-feet per acre, and "[t]his range is extremely important to the determination," because Plaintiff's calculation of 3.94 acre-feet per acre would fall within this range. (Pl. MSJ at 7-8.) At the hearing held on December 12, 2018, counsel for Plaintiff confirmed that Plaintiff does not dispute that 3.6 – 4.5 acre-feet per acre is an appropriate range for this determination. (ECF No. 25.) RMA also signified that the calculation of water applied is the central issue to the GFP determination, noting that "[t]he key question and subject of this GFP is whether or not adequate irrigation water was applied in 2014." (AR 523.)

Given this, the critical question before the Court is whether the agency employed a proper formula and figures in its calculation of the amount of water available to Plaintiff's orchard in 2014. This issue is addressed by the Court in the following section.

3. Good Farming Practices Determination Issue No. 3- The Calculation of Water Applied to Plaintiff's Orchard

The Court finds the agency's calculation of the water available to Plaintiff's orchard in 2014 was a reasonable determination based on an industry-accepted formula published in the scientific literature, and calculated using figures with an established basis in the record. RMA

determined that Plaintiff failed to apply proper irrigation in 2014 through use of a formula contained in the California Microirrigation Pocket Guide published by the National Center for Appropriate Technology. (AR 526-27.) The formula is: Gross application of water (in acre inches per acre) = (GPM × Hours) ÷ (450 × Number of Acres). (AR 504.) RMA obtained the 1,500 GPM figure from Plaintiff's Pre-Acceptance Perennial Crop Inspection Report. (AR 526; AR 245.) RMA utilized the PG&E utility report for the fact that Plaintiff's irrigation well pump ran for 1,349 hours in 2014. (AR 526; AR 277.) Plaintiff's almond orchard encompassed a total of 194 acres. (AR 526; AR 246.) These numbers were entered into the formula to determine the amount of irrigation Plaintiff's orchard received from Plaintiff's well during the relevant time period.

As noted previously in this opinion, RMA made an error in its calculation. Its calculation of 458.3 divided by 194 results incorrectly in a figure of 2.94 acre-feet per acre, rather than the correct result of 2.36 acre-feet per acre, when rounded. (AR 527.) The Court finds this miscalculation to be harmless error as it actually favors Plaintiff in the amount of water calculated to have been applied to the orchard through irrigation and rainfall in the 2014 year. (Def. Opp'n at 12; AR 527.) The Court also notes that in RHIS's determination, it calculated a figure of 2.36 acre-feet per acre for 2014, however it is not clear from the record if this is the formula RHIS utilized. (Def. Opp'n at 12; AR 287.)

Plaintiff urges the Court to find that RMA was compelled to accept Plaintiff's own calculation of the water available to his orchard, rather than the formula it utilized. In Plaintiff's July 1, 2016 letter to RMA, Plaintiff provided his own calculation resulting in a figure of 3.94 acre-feet of water available to the orchard in 2014. (AR 270.) Defendant correctly points out that the 2014 PG&E portion of the calculation ("347,360 KWH ÷ avg $110/kwh = 568.24 ac/ft") is incorrect because 347,360 divided by 110 equals 3,157.82, not 568.2. (Def. Opp'n at 8; AR 270.) Plaintiff's attorney then offered a new calculation using the dollar amount of Plaintiff's PG&E bill, and factors provided by the farmer about the cost to pump an acre-foot of water. As outlined above, Plaintiff's clarification emailed to RMA on September 21, 2016, explained that "$62,517.46 is the total paid to PG&E for the applicable well water being pumped," which was

converted to acre-feet of water by utilizing the figure of $110.00 as an average cost to pump an acre foot of water. (AR 274.) The email also states that the $110.00 figure is an "assumption [] provided by the farmer based on prior PG&E bills for th[e] ranch and similar ranches and observations of water in the field [which] took into consideration a breakdown of off-peak, on-peak, and part-peak water which was separately calculated from the PG&E billings." (Id.)

Plaintiff argues that despite being provided with Plaintiff's calculation and figures, "RMA appears to have rejected the information as it could not confirm if the method used was accurate," and "[r]ather than seeking clarification, RMA simply disregarded the information." (Pl. MSJ at 8.) The Court finds Plaintiff's argument that Defendant did not consider the submissions by Plaintiff or seek clarification before coming to its determination is without merit. The record demonstrates that RMA in fact requested a further breakdown of the 'steps' taken in calculating the well water that Plaintiff had provided in its July 1, 2016 letter. (AR 274.) Plaintiff's September 21, 2016 email providing clarification of the steps directly states that it is in response to a request from RMA for "a further breakdown of the 'steps' taken in calculating the well water." (Id.) Additionally, before coming to its determination, the record demonstrates that Defendant also permitted an extension of time for Plaintiff to submit expert declarations in August of 2016. (AR 279-81.)

RMA considered the documents before it in the record along with the information provided by Plaintiff, including documents submitted by Plaintiff urging RMA to use his calculation of the water available to the almond orchard. In consideration of the information before it, RMA decided that it could not base its calculation on the assumptions provided by Plaintiff. Specifically, RMA noted that it had "requested additional information on how the 3.11 AF/acre was calculated," and after reviewing Plaintiff's response via the September 21, 2016 email, RMA determined that it "could not confirm if the method used was accurate." (AR 525.)

The Court agrees with Defendant that Plaintiff's calculation "relies on an entirely unsupported 'assumption' about the dollar cost of pumping an acre-foot of water . . . a variable that is the key to the entire calculation [and] is without any evidence to support it." (Def. Opp'n at 10.) Plaintiff bears the burden under the insurance policy guidelines to document or

demonstrate good irrigation practices. (AR 251.) The Court has reviewed the PG&E utility statement (AR 277), and cannot readily discern how Plaintiff came to the $110.00 figure in his calculations. The Court agrees with Defendant that Plaintiff fails to explain how RMA could have used the information contained in the PG&E utility bill to confirm the $110.00 assumption. Plaintiff's explanation of how the figure was calculated lacks the precision that would allow the agency to understand how the figure was computed, let alone compel the agency or the Court to find that his calculation would be more valid then that employed by the agency. The Court does not know how the agency would confirm an assumption that is based on utility bills from "similar ranches" that do not appear in the record, and based on Plaintiff's vague statement regarding "observations of water in the field." (Id.)

Plaintiff's email to the agency also notes that "[t]he two experts that submitted declarations reviewed all underlying data and this assumption and agreed that the calculation was reasonable." (Id.) Even considering the declarations submitted by Plaintiff, including the second page of the Larry Maddox declaration that Plaintiff states is missing from the record, the Court does not find that these materials make any difference to the review of RMA's determination. Specifically, Scott Nagra's declaration does not address Plaintiff's calculation of the $110.00 average cost to pump an acre foot of water. (AR 280.) Additionally, Larry Maddox's declaration fails to address how Plaintiff's $110.00 figure is derived, and fails to substantiate its accuracy in a manner that would compel the agency to accept the assumption. Mr. Maddox only generally states that he reviewed the PG&E water pump bills, the water district bills relating to purchased water, and the CIMIS Firebaugh temperature and rainfall data for 2015 and concluded that he "agree[s] with [Plaintiff's] statement that water available to the trees in crop year 2015 was 3.94 acre feet of water including (a) 568.24 acre feet of well water, (b) 83 acre feet of purchased District Water and .58 acre feet of rain," and that in his "opinion, there was ample water available to care for the trees and carry a normal crop to harvest time." (Agrall Decl. Ex. B., at 85.) The Court notes that Mr. Maddox's declaration refers to the year 2015, however Plaintiff's calculation relates to 2014.

RMA was reluctant to accept Plaintiff's $110.00 assumption, and the declarations

provide no analysis or specific basis for RMA to determine the accuracy of the $110.00 figure. This is particularly significant when considering Plaintiff is essentially arguing that RMA should have been compelled to use Plaintiff's figures in lieu of the industry-accepted scientific formula from NCAT, which RMA utilized by by entering numbers derived directly from accurate sources in the record, such as the GPM obtained from Plaintiff's Pre-Acceptance Perennial Crop Inspection Report (AR 245), and the number of hours the pump operated derived from the PG&E utility report (AR 277).

Plaintiff has failed to meet the burden of demonstrating RMA's decision to use the NCAT formula and its resulting calculation was arbitrary and capricious because he fails to show why the agency should have been compelled to use his alternate calculation and assumption. RMA did not "rel[y] on factors which Congress has not intended it to consider, entirely fail[] to consider an important aspect of the problem, offer[] an explanation for its decision that runs counter to the evidence before the agency, [n]or is [the decision] so implausible that it could not be ascribed to a difference in view or the product of agency expertise." Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983). The agency's interpretation must be upheld if it is supported by the record and has a reasonable basis in law. Unemployment Comp. Comm'n of Alaska v. Aragon, 329 U.S. 143, 153-54 (1946).

Again, and as particularly relevant to the decision to use the formula in question under these circumstances, the Court's deference is heightened where "analysis of the relevant documents requires a high level of technical expertise," and the Court "must defer to the informed discretion of the responsible federal agencies." Arizona Cattle Growers' Ass'n v. U.S. Fish & Wildlife, Bureau of Land Mgmt., 273 F.3d 1229, 1236 (9th Cir. 2001) (quoting Central Ariz. Water Conservation Dist. v. EPA, 990 F.2d 1531, 1539–40 (9th Cir.1993)). Upon review of the scientific literature containing the formula, and records used to obtain the figures entered into the formula that were relied upon by RMA in making its determination, the Court finds that "the evidence in the administrative record permitted the agency to make the decision it did," and "the agency could reasonably have found the facts as it did." City & Cty. of San Francisco v. United States, 130 F.3d 873, 877 (9th Cir. 1997) (quoting Occidental Eng'g Co. v. INS, 753 F.2d

766, 769-70 (9th Cir.1985)).

V.

CONCLUSION AND ORDER

The Court finds that the agency's decision to uphold RHIS's denial of the insurance claim through its good farming practices determination was not arbitrary, capricious, an abuse of discretion, or unsupported by substantial evidence. Spencer Enterprises, Inc. v. United States, 345 F.3d 683, 693 (9th Cir. 2003). The Court is not unsympathetic to Plaintiff's situation. He has successfully operated the orchard for many years, apparently without any failed crop years or major insurance claims for this orchard. Farmers form the backbone of the country, and are especially integral to the community here in the central valley of California. Thomas Jefferson once wrote to John Jay that: "Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bands." United States v. Torlai, 728 F.3d 932, 934 (9th Cir. 2013) (quoting 8 The Papers of Thomas Jefferson 426 (Julian P. Boyd et al. eds., Princeton University Press) (1950) (spelling modernized)).

However, the Court's role in reviewing agency decisions is limited, particularly when the decision involves scientific expertise. Plaintiff has not met his burden of demonstrating that Defendant failed to consider the relevant factors in coming to its determination, or that the agency's decision runs counter to the evidence in the record. The Court finds Defendant duly considered the relevant scientific literature, the information provided by Plaintiff, and other materials in the record in coming to its determination.

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Based on the foregoing IT IS HEREBY ORDERED that:

1. Plaintiff's motion for summary judgment is DENIED;

2. Defendant's motion for summary judgment is GRANTED; and

3. The Clerk of the Court is DIRECTED to enter judgment in favor of Defendant Federal Crop Insurance Corporation and against Plaintiff Kewal Singh.

IT IS SO ORDERED.

Dated: **December 27, 2018**

UNITED STATES MAGISTRATE JUDGE