

**From :** Tim Reiersen <[tim@water-consultant.com](mailto:tim@water-consultant.com)>  
**To :** [scwcb6@gmail.com](mailto:scwcb6@gmail.com)  
**Subject :** RE: Greiff Applications - SPOK-22-01,02,03  
**Cc :** Kevin Freeman <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>; Kelly Williquette <[kwilliquette@scwd3.org](mailto:kwilliquette@scwd3.org)>; [savage4citycouncil@gmail.com](mailto:savage4citycouncil@gmail.com); dwilHITE1975 <[dwilHITE1975@yahoo.com](mailto:dwilHITE1975@yahoo.com)>  
**Received On :** 2/26/2023 7:23 AM

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To the Spokane County Water Conservancy Board:

My previous email was intended to signal complete closure between my client and the board.

The board's reply message offering help is so contrary to what has transpired that I'll respond once more.

I'll share my personal thoughts first, then respond on behalf of my client. If any board member abstained or voted against the action to decline processing, none of this applies to you, and I thank you.

Speaking personally and only for myself, I don't see how the board can help the Greiffs now that it's declined to process their applications.

Also, the board wasn't required to give any reason, but chose to add prejudicial statements to its letter ("significant issues" ... "would subsequently be denied by Ecology"). I don't think my client could stand any more of that kind of help. It appears to me the change applications are dead.

My client had just spent another \$1000 on an amended public notice. I didn't attend the January meeting because the amended notice was in progress. To my knowledge I received no notification of the change in the February meeting (Feb 20<sup>th</sup> was not the 4<sup>th</sup> Monday, btw). So my client had no voice in the board's decision, yet it proceeded anyway. I had previously been keep well-informed of board meetings by email.

I had gone ahead with these final updates in good faith based on Ecology's (Jaime Short) December 28, 2022 email. I consistently communicated this to the board beginning the next day, that I would "continue to offer support to the board for its decisions", and clearly, I continued on with further submittals, sending emails and information on 12/30, 1/4/2023, 2/3/2023, 2/6/2023, 2/22/2023.

Just for example, if you scroll down this email, you'll see my extensive submittal of February 6, 2023. And I receive no notification that the board had moved its meeting to Feb 13, where it decided to decline processing.

Ecology's 12/28/2022 email had finally acknowledged that water rights can be overlapped, and that the decision about how many acres was reasonable was for the board to make.

Obviously I'm not bringing this up for my sake, my official work in front of the board has concluded. Maybe it will help someone else, is my personal thought. Everyone's time is valuable and the board, as of February 13<sup>th</sup>, was done.

I'm not questioning the board's authority to decline processing. I am questioning the board's offer to help my client after making that decision. This is the end of my commentary on that.

Speaking on behalf of my client, if the board has some other way to help the Greiffs, feel free to share it and I'll pass it through.

Sincerely,

Tim Reiersen

*Streamline Water Consulting LLC*

Tim Reiersen, PE      [tim@water-consultant.com](mailto:tim@water-consultant.com)  
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Yakima WA 98908      fax (509) 965-6995

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**From:** [scwcb6@gmail.com](mailto:scwcb6@gmail.com)

**Sent:** Saturday, February 25, 2023 7:45 PM

**To:** Tim Reiersen

**Cc:** 'Kevin Freeman'; 'Kelly Williquette'; [savage4citycouncil@gmail.com](mailto:savage4citycouncil@gmail.com); [dwilHITE1975](mailto:dwilHITE1975)

**Subject:** RE: Greiff Applications - SPOK-22-01,02,03

We are happy to put you on the agenda for our March meeting. We do want to help the Grieffs out and make sure they get the water they need.

Tony

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**From:** Tim Reiersen <[tim@water-consultant.com](mailto:tim@water-consultant.com)>

**Sent:** Friday, February 24, 2023 12:33 PM

**To:** [scwcb6@gmail.com](mailto:scwcb6@gmail.com)

**Cc:** 'Kevin Freeman' <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>; Kelly Williquette <[kwilliquette@scwd3.org](mailto:kwilliquette@scwd3.org)>; [savage4citycouncil@gmail.com](mailto:savage4citycouncil@gmail.com); 'dwilhte1975' <[dwilhte1975@yahoo.com](mailto:dwilhte1975@yahoo.com)>

**Subject:** RE: Greiff Applications - SPOK-22-01,02,03

No need to respond, I won't take any more of the board's time.

*Streamline Water Consulting LLC*

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**From:** Tim Reiersen

**Sent:** Wednesday, February 22, 2023 4:37 PM

**To:** [scwcb6@gmail.com](mailto:scwcb6@gmail.com)

**Cc:** 'Kevin Freeman' <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>; Kelly Williquette <[kwilliquette@scwd3.org](mailto:kwilliquette@scwd3.org)>; [savage4citycouncil@gmail.com](mailto:savage4citycouncil@gmail.com); 'dwilhte1975' <[dwilhte1975@yahoo.com](mailto:dwilhte1975@yahoo.com)>

**Subject:** RE: Greiff Applications - SPOK-22-01,02,03

I would like to request a place on the agenda for the upcoming meeting, by zoom or phone if possible. I don't understand why the board would take such an action without input from the applicant? I was not informed of this and had no idea this was even being considered.

I think it's important for the entire board to hear from the Greiff's at the meeting. I will need to see if they can attend somehow. This is likely to have a profound and possibly devastating effect on a historic farm, and their livelihood. This is a subsistence farm.

Here is the issue. There are no time constraints for Ecology to take action. The board process is the only timely statutory relief available to the Greiffs. The hopeful part of this is, the board has no liability or adversity against it, simply by proceeding with a decision. The Greiffs, on the other hand, have everything to lose. Time delays will cost them dearly. This issue is ripe for resolution now.

Please help them.

Sincerely,

Tim

*Streamline Water Consulting LLC*

Tim Reiersen, PE [tim@water-consultant.com](mailto:tim@water-consultant.com)

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**From:** [scwcb6@gmail.com](mailto:scwcb6@gmail.com) <[scwcb6@gmail.com](mailto:scwcb6@gmail.com)>

**Sent:** Wednesday, February 22, 2023 11:13 AM

**To:** Tim Reiersen <[tim@water-consultant.com](mailto:tim@water-consultant.com)>

**Cc:** 'Kevin Freeman' <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>

**Subject:** RE: Greiff Applications - SPOK-22-01,02,03

We have decided to turn this over directly to Ecology after they gave us technical assistance on your applications. I mailed the letters to you, Ecology and the Grieffs yesterday. We will return your application fees when our treasury gets back in town. Kevin is also out of town for the next two weeks.

Tony

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**From:** Tim Reiersen <[tim@water-consultant.com](mailto:tim@water-consultant.com)>

**Sent:** Wednesday, February 22, 2023 5:53 AM

To: [scwcb6@gmail.com](mailto:scwcb6@gmail.com); [alkiepe1@gmail.com](mailto:alkiepe1@gmail.com)  
Cc: 'Kevin Freeman' <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>  
Subject: RE: Greiff Applications - SPOK-22-01,02,03

I'm writing to follow up on the below email. Does the board have direction for me to proceed? Shall I prepare the ROEs for the other two water rights for the upcoming board meeting?

Thank you,

Tim

*Streamline Water Consulting LLC*

Tim Reiersen, PE                      [tim@water-consultant.com](mailto:tim@water-consultant.com)  
he/him RYE er sun  
6604 Appleview Rd                      ph (509) 965-7175  
Yakima WA 98908                      fax (509) 965-6995

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From: Tim Reiersen  
Sent: Monday, February 6, 2023 9:01 PM  
To: [scwcb6@gmail.com](mailto:scwcb6@gmail.com); [alkiepe1@gmail.com](mailto:alkiepe1@gmail.com)  
Cc: 'Kevin Freeman' <[kfreeman@inlandearth.com](mailto:kfreeman@inlandearth.com)>  
Subject: Greiff Applications - SPOK-22-01,02,03

The attached materials are provided to support the Greiff decisions. The updates include the increase from 100 to 112 acres and Ecology feedback.

Attached:

**1. Technical Memorandum 2<sup>nd</sup> Supplement dated February 5, 2023.** Addresses errors pointed out by Ecology in the 11/8/2022 memo, and year 2022 water use.

I will mail the original to you with copies of replacement/redlined pages to insert in the 11/8/2022 memo for each file.

**2. Proposed updated ROE for SPOK-22-01.** Once acceptable, I will prep the ROEs for SPOK-22-02,03.

Below is a summary of changes, compared to the prior approved (8/22/2022) version that was withdrawn 11/15/2022. These changes are incorporated within the new version attached, today's date.

**Update ROE for SWC 4057 = SPOK-22-01. Page numbers are from 8/22/2022 version.**

p3 Proposed Use, Board's Decision on the Application  
changed 100 acres to 112 acres

p3 Board's Decision on the Application  
changed Maximum acre-ft/yr changed 48 to 32.8  
changed Type(s) of use to 32.8 ac-ft/yr and 112 acres

p4 BACKGROUND  
update 100 ac to 112 ac

p5 Other, added language:

On August 22, 2022 the board issued a decision on the application as originally filed. After subsequent discussion with Ecology, on November 15, 2022 the board decided to withdraw the decision. The current decision addresses the issues raised and includes an amendment to the application. The amendment increased requested irrigation acres from 100 to 112 acres, non-additive to the other two water rights.

p6 COMMENT AND PROTESTS, added sentence:

An amended notice was published in The Spokesman-Review January 2 and 9, 2023. The application as amended requested an irrigation area of 112 acres, compared to 100 acres originally advertised.

p6 Proposed project plans and specifications  
The maximum total irrigation area proposed is ~~100~~ 112 acres.

p8 Tentative Determination

**See attached word document for markup "notes\_ROE\_markup.docx".**

p9 Geologic, Hydrogeologic, or other scientific investigations (if applicable)  
**See attached word document for markup "notes\_ROE\_markup.docx".**

p11 DECISION

1(b). [annual volumes and acres updated (32.8, 15.3, 58.4af and 112 ac)]

p12 PROVISIONS

Combined use limit. The quantities authorized are not to exceed ~~113~~ 106.5 ac-ft/yr for irrigation of ~~100~~ 112 acres in combination among the following: Surface Water Certificate (SWC) 4057, Ground Water Certificate (GWC) 4589-A and certificate G3-01333C. The annual quantity is considered all consumptive use.  
END.

I'll try to turn around any comments right away, with hopes for decisions at the next board meeting.  
Thank you,  
Tim

*Streamline Water Consulting LLC*

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TECHNICAL  
MEMORANDUM  
2nd SUPPLEMENT



**DATE:** February 5, 2023

**TO:** Spokane County Water Conservancy Board

**FROM:** Tim Reiersen, consultant for applicant

**SUBJECT:** **2<sup>nd</sup> Supplement of Information – Response to Ecology Comments**  
Greiff Applications for Change Under Certificate Nos.  
4057 (SPOK-22-01), 4589-A (SPOK-22-02) and G3-01333C (SPOK-22-03)

This memo provides information in response to Ecology's December 28, 2022 email from Jaime Short to the water board (**Attachment 1**). Also, because the 2022 irrigation season has now concluded, this memo gives an estimate of beneficial use for each of the three water rights during the past year. Previous memos by the author were submitted dated November 8, 2022 (memo to Ecology, board copied) and May 23, 2022 (memo to board).

**1. Ecology identifies two errors in the November 8, 2022 memo (12/28/2022 Short email).**

1.a. Year 2021 season, SWC 4057: should be limited to a maximum of 36.35 ac-ft, compared to 48 ac-ft used in the memo.

*Response:* Without agreeing, I am changing the number. The memo (page 3, Table 3a.) has been red-lined to incorporate Ecology's result, see **Attachment 2**.

1.b. Year 2021 season, G3-01333C, should be limited to a maximum of 68 ac-ft, compared to 73.5 ac-ft used in the memo.

*Response:* Agree. The memo (page 4, Table 3c.) has been red-lined to incorporate this correction, see **Attachment 2**.

## 2. Year 2022 Water Use Estimates

With the passage of time, the year 2022 irrigation season has concluded. Previous work was submitted while the season was still in progress.

Alfalfa hay was irrigated during 2022. The well had mechanical problems with its screen and could not be used without risking damage to irrigation equipment and the pump. Therefore, zero use is accounted to GWC 4589-A and G3-01333C. The spring source was used very sparingly, as explained to me by Mr. Greiff, resulting in deficit irrigation. Mr. Greiff suffered an injury which made him unable to work on the farm for much of the year. With only one source available they only used water at key development stages of the alfalfa stand.

Crop demand model estimates of water use, such as AgWeatherNet and the Washington Irrigation Guide, do not apply to deficit irrigation because they assume optimum crop production. The only available method to estimate water use was electrical power consumption. The spring pump consumed 9830 kw-hr during the 2022 season. Using the same operating assumptions as described in detail within the May 23, 2022 memo, year 2022 water use from the spring is estimated to be 26 ac-ft. If all this use was attributed to SWC 4057 (the only water right from the spring), this would be less than year 2020 and 2021 (highest two years within previous five for this water right). The year 2022 water use therefore has no effect on the annual consumptive quantity estimate.

Using the updated numbers from Item No. 1 to correct the November 8, 2022 memo, estimates of annual consumptive quantity for each of the rights are:

SWC 4057: 32.8 ac-ft (*reduced from 36.7 ac-ft compared to original Nov. 8, 2022 memo*).  
GWC 4589-A: 15.3 ac-ft (*same*).  
G3-01333C: 58.4 ac-ft (*reduced from 61 ac-ft*).

The total combined annual volume proposed for approval is  $(32.8 + 15.3 + 58.4) = 106.5$  ac-ft.

**Attachment 1:** Ecology December 28, 2022 email

**Attachment 2:** redline, replacement pages for November 8, 2022 memo

**From:** Short, Jaime (ECY) <JSH0461@ECY.WA.GOV>

**Sent:** Wednesday, December 28, 2022 4:27 PM

**To:** Tim Reiersen <tim@water-consultant.com>

**Cc:** Anthony Kiepe <alkiepe1@gmail.com>; scwcb6@gmail.com; 'Kevin Freeman' <kfreeman@inlandearth.com>; Kelly Williquette <kwillicette@scwd3.org>; savage4citycouncil@gmail.com; 'dwilHITE1975' <dwilHITE1975@yahoo.com>; Spangle, Herm (ECY) <HSPA461@ECY.WA.GOV>

**Subject:** RE: Proposal to Complete Greiff - SPOK-22-01,02,03

Mr. Reiersen,

You make a number of statements and raise a few questions in your [December 27, 2022] email. I will attempt to address them in order:

- *“Mr. Spangle and you have raised issues about complying with the individual water right limits (such as when a well goes down). The purpose of the change applications has been to resolve all of those concerns. This remains the goal for my client.”* This statement is deeply concerning. Even if the place of use is expanded and these rights overlap, they are still limited by their individual Qi and Qa. If the well goes down, you client is not authorized to pump the quantities permitted by the ground water rights from the spring. That would be a gross expansion of the surface water right. The converse is true if the surface water right is curtailed – the wells cannot be used to pump the quantities authorized from the spring. A shared place of use will not resolve the issue as you have described it in your email.
- November 8<sup>th</sup> memo supplementing the record before the Board. There are a number of errors in the November 8<sup>th</sup> memo, so the document as written is not sufficient to support a new decision by the Board. For example, we acknowledge that Surface Water Certificate 4057 was not issued a quantity for acre-feet or total use for the five month season originally applied for. That being said, calculating 44.1 acre-feet of use in 2021 exceeds the amount of water that could be pumped at the authorized rate of 0.12 cubic feet per second, 24 hours a day from May to October. If the surface water system was never turned off for harvest, regulation or maintenance at this diversion, the total quantity of water that could be pumped is 36.35 acre-feet for the requested season of use. For comparison, the Washington State Irrigation Guide (WIG) for the Spokane area lists a 2.2 acre-feet consumptive use quantity needed to grow alfalfa. A 75 percent efficient irrigation system would require 2.93 acre-feet per acre or 35.2 acre-feet total for 12 acres during the irrigation season. Another example is the quantity listed under “annual use” for G3-01333C for the 2021 season. The quantity authorized under this right is 68 acre-feet. Including quantities in excess of that amount to determine ACQ is not allowed. Once the errors in the memo are corrected, the Board will have to decide if it is reasonable and feasible to spread each of these rights to 112 acres.

**ATTACHMENT 1, p. 1 of 2**

Ecology December 28, 2022 email

- Questions 1-4 regarding overlapping rights. Overlapping rights have been approved by the agency over time; there is no law prohibiting it. The challenge with this particular portfolio is the small number of acres authorized by each of the rights. Since RCW 90.03.380 requires each right to be evaluated on its own merits, the ACQ calculation must be applied in the same fashion. Once the memo is corrected, the Board will have to determine if it is feasible to spread the quantity historically used to irrigate 5 acres to 112. Using the number from your memo, that would equate to a water duty of 0.14 acre-feet per acre. The Board will need to determine if it is reasonable to conclude that 0.14 acre-feet per acre for irrigation is a beneficial use. If they determine that the quantity should be spread to fewer acres, the place of use will need to be more clearly defined. A defined place of use and source meters with annual reporting become even more important when we are dealing with one right that could be curtailed because of low flows and a problematic well that serves the other two. Curtailment in the Little Spokane Basin is happening on a nearly annual basis, there is no reason to assume that surface supplies will not be impacted more frequently than they have been in the past.

It is ultimately the Boards' decision on how to proceed from this point forward. We will make ourselves available if they would like to discuss a revised proposal.

Sincerely,  
Jaime Short (she/her)  
Section Manager, Eastern Regional Office  
Water Resources Program, WA Dept. of Ecology  
509.990.7636 (cell)

**ATTACHMENT 1, p. 2 of 2**

Ecology December 28, 2022 email



within the board's decisions were accurate to full alfalfa cropping on the 37 acres, with more intensive irrigation practices.

To provide the information requested in the October 26, 2022 email, I will proceed to estimate the water used for the years 2017-2021 within the current water right places of use, and account the cropping specifically to each water right for each year.

**Figure 2** (attached) illustrates the field dimensions used in the **Figure 1** (attached) scenario of water right accounting. The north-south running dashed line in **Figure 2** separates the spring grains cropping on the west from alfalfa on the right, again only for the years **2018-2019**. All fields within the current water right places of use were in alfalfa during 2017 and 2020-2021.

**Table 2** below shows the water duties that form the basis of the estimates. The water duty estimates for 2020-2021 are from the high use years which were used to calculate the ACQ within the board decisions for each of the three water rights. The values were estimated from power records with independent verification from wheel line run times.

Crop	2017	2018	2019	2020	2021
Spring Grains	n/a	12 in	12 in	n/a	n/a
Alfalfa	24 in	24 in	24 in	29.2 in	44.1 in

Table 2. Water duties for annual use estimates.

By using the field dimensions in **Figure 1** (years 2017, 2020, 2021) and **Figure 2** (years 2018, 2019), the specific land areas are accounted to each water right for each year. The cropping is also accounted for in the below information, as requested. This is one of many possible scenarios for accounting the water rights, however when the cropping is uniformly alfalfa, the answer is the same any way the lines are drawn. These results are summarized in **Table 3a** (SWC 4057), **3b** (GWC 4589-A), and **3c** (G3-01333C) below. For all three water rights, the years 2020-2021 were the highest two years for purposes of ACQ.

Year	Spring Grains		Alfalfa		Total	
	Area	Annual Use	Area	Annual Use	Area	Annual Use
2017	--	--	12 ac	24 ac-ft	12 ac	24 ac-ft
2018	6 ac	6 ac-ft	6 ac	12 ac-ft	12 ac	18 ac-ft
2019	6 ac	6 ac-ft	6 ac	12 ac-ft	12 ac	18 ac-ft
2020	--	--	12 ac	29.2 ac-ft	12 ac	29.2 ac-ft
2021	--	--	12 ac	44.1 ac-ft	12 ac	44.1 ac-ft
High 2 yrs avg = (29.2+44.1)/2= 36.7 af						36.35

Table 3a. Annual water use for SWC 4057.

36.35 32.8

36.35

Year	Spring Grains		Alfalfa		Total	
	Area	Annual Use	Area	Annual Use	Area	Annual Use
2017	--	--	5 ac	10 ac-ft	5 ac	10 ac-ft
2018	0.7 ac	0.7 af	4.3 ac	8.6 ac-ft	5 ac	9.3 ac-ft
2019	0.7 ac	0.7 af	4.3 ac	8.6 ac-ft	5 ac	9.3 ac-ft
2020	--	--	5 ac	12.2 ac-ft	5 ac	12.2 ac-ft
2021	--	--	5 ac	18.4 ac-ft	5 ac	18.4 ac-ft
High 2 yrs avg = (12.2+18.4)/2= 15.3 af						

Table 3b. Annual water use for GWC 4589-A.

Year	Spring Grains		Alfalfa		Total	
	Area	Annual Use	Area	Annual Use	Area	Annual Use
2017	--	--	20 ac	40 ac-ft	20 ac	40 ac-ft
2018	11 ac	11 af	9 ac	18 ac-ft	20 ac	29 ac-ft
2019	11 ac	11 af	9 ac	18 ac-ft	20 ac	29 ac-ft
2020	--	--	20 ac	48.7 ac-ft	20 ac	48.7 ac-ft
2021	--	--	20 ac	73.5 ac-ft	20 ac	73.5 ac-ft
High 2 yrs avg = (48.7+73.5)/2= 61 af.						

Table 3c. Annual water use for G3-01333C.

From here, the board decisions take the results for 2020 and 2021 and complete the ACQ evaluation with the conclusion for each separate water right that the consumptive use for each will not be increased due to each change. You will notice slight differences in the 2 year averages, compared to the board decisions. This is due to slightly different rounding approaches. The approach used here distributed the 90 af (2020) and 136 af (2021) total use estimates in proportion to acres, rather than according to the board's tentative determinations of annual volume for each water right. The applicant has no preference over which results are used, they are within estimation error.

### 3. To what extent can those acres reasonably be expanded under the change?

This is discussed in the board's decision. Please see the technical memorandum and application materials where deficit irrigation and irrigation management practices are discussed. This was carried forward to the board's decision within the section "INVESTIGATION – Proposed project plans and specifications". The Greiffs will use deficit irrigation practices and

## WATER CONSERVANCY BOARD Application for Change/Transfer – Report of Examination

***Do Not Submit these Instructions with your Application***

### Instructions and Form

**IMPORTANT NOTE:** These instructions are provided as a guide to water conservancy boards when writing a report of examination regarding a water right change application. *“It is the responsibility of the water conservancy board to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination.”* [WAC 173-153-130(5)] It is also the responsibility of the board to ensure that the final report complies with the minimum requirements as provided in the Water Conservancy Board rule, WAC 173-153-130(6).

### INTRODUCTION

There are two distinct sections within the report of examination (ROE) form.

1. **Front page** – All information found on page 1 including the demographic and application identification information, “Background and Decision Summary”, “Description of proposed work”, and “Development Schedule”. *Each separate decision requires a unique and separate record of decision (ROD form) and report of examination front page form.*
2. **Report** (narrative) – All information found under the section “Report.”

### FRONT PAGE

#### *Demographic and Application Identification*

1. Check a box to identify whether the application is for surface water or ground water.
2. Application received – Enter the date the application was accepted by the board.
3. Water right document number – Enter the water right document number, e.g., certificate, claim, permit number, etc.
4. Water right priority date – Enter the priority date of the water right, when water was first put to use.
5. Board assigned change application number – Enter the board assigned application number as described in WAC 173-153-070(11).
6. Name, address, city, state, zip – Enter the name and address of applicant.
7. Changes proposed – Check all box(es) that apply to the changes proposed in the application.
8. SEPA – Check a box identifying whether the application is exempt or non-exempt from SEPA. This section relates to the application only. How SEPA relates to the *project* will be addressed in the narrative report section.

## *Background and Decision Summary*

1. Existing right (tentative determination) – Complete these boxes based on what is actually being used *right now*. Make a tentative determination as to the validity and extent of the right as it is currently being beneficially used.
2. Proposed use – Complete these boxes with the exact information as it is written on the application.
3. Board's decision – Complete these boxes based on the board's final decision. The board should determine what exactly is available for transfer including the instantaneous and annual quantities, place of use, point of diversion or withdrawal, and purpose of use and season of use.

## *Description of Proposed Works*

Describe the water system the applicant intends to use with the proposed change such as irrigation system, pump type, etc.

## *Development Schedule*

1. Begin project by this date – Identify the date when the applicant may begin the project. The board must consider that the applicant cannot begin until a final decision is made by Ecology. Potentially, this could be a minimum of 45 days or 75 days. It is recommended that the board also consider the 30 day appeal period when determining the beginning construction date. [WAC 173-153-130(8)]
2. Complete project by this date – Identify the date when the project and works must be completed.
3. Complete change and put water to full beneficial use by this date – Identify the date when the applicant must complete the change and put all water to beneficial use as approved in the change application.

## **REPORT (NARRATIVE)**

### *Writing a report of examination for more than one water right application*

It is important that each water right file is able to stand alone. **Each separate decision requires a separate map reflecting existing and proposed point(s) of diversion or withdrawal and place of use (RCW 90.03.260(7); WAC 173-153-070 (6)(c)).**

However, when writing an ROE for more than one related water right change, the narrative “Report” section of the ROE, including background, comments/protests, investigation, conclusions, and decision, may summarize all the related rights in one report. The narrative can then be copied to accompany the related form. But, there cannot be just one document for all the applications; each file is required to have a separate document.

### *Writing a report of examination*

## **Refer to WAC 173-153-130**

The Water Conservancy Board rule is clear regarding the minimum information required when writing a report of examination. The information requested on the form is copied from the rule verbatim. *More information may be necessary than what is required in the rule and the need must be determined by the board on a case-by-case basis.* WAC 173-153-130(5) states, “It is the responsibility of the water conservancy board to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination.” [Emphasis added]

1. WAC 173-153-130 (6) requires the report of examination to consist of a form provided by Ecology and identified as Water Conservancy Board Report of Examination, form number 040-106, documenting and summarizing the basic facts associated with the decision.
2. Describe all information as required in each narrative section on the report of examination form as follows:
  - a. **Background** – Complete the background section as described on the form and also include any other information pertinent to the application.
  - b. **Comments and protests** – Complete the comments and protests section as described on the form and also include any other information pertinent to the application.
  - c. **Investigation** – Complete the investigation section as described on the form. Also, consider the unique characteristics of each application and include other information that may be pertinent to the decision such as:
    - i. The applicant's ownership interest in the water right, if multiple owners, describe how right is apportioned;
    - ii. The information the board used to quantify beneficial use under the right, including meter records, power data, aerial photos, crop type, crop irrigation requirement and efficiency estimates, declarations, etc;
    - iii. For claims, discuss historic beneficial use and when the beneficial uses were perfected;
    - iv. For permits, discuss the current development schedule and whether the water right is in good standing;
    - v. If a portion of the right is proposed for change, a tentative determination must be completed for the entire water right. The portion being changed should be described on the front sheet of the ROE;
    - vi. For changes where additional acres or new purposes of use are being added, calculate the annual consumptive quantity. Describe the years used to determine the ACQ and the source of the data;
    - vii. Water rights in the vicinity that may be impaired by the proposed transfer, including an evaluation of impacts on the closest/relevant water rights;
    - viii. If groundwater rights have the potential to be impaired by the proposed transfer, reference and attach appropriate well logs;
    - ix. For surface to ground transfers, discuss continuity between sources.
  - d. **Conclusions** – Complete the conclusions section as described on the form. Also, consider the unique characteristics of each application and include other information that may be pertinent to the decision such as:
    - For surface to ground transfers where the surface sources was not always available (e.g. some tributary streams), discuss the potential for enlargement of the right.
  - e. **Decision** – Complete the decision section as described on the form. Also, consider the unique characteristics of each application and include other information that may be pertinent to the decision such as:
    - When only a portion of the right is changed, include a description of how superseding documents should issue to each owner including the characteristics of each right, e.g. place, purpose, quantities.
  - f. **Provisions** – Complete the provisions section as described on the form. Also, consider the unique characteristics of each application and include other information that may be pertinent to the decision such as measurement/metering, screening, etc.







Board Name: Spokane County

## WATER CONSERVANCY BOARD

### Application for Change/Transfer

OF A RIGHT TO THE BENEFICIAL USE OF THE PUBLIC WATERS OF  
THE STATE OF WASHINGTON

## REPORT OF EXAMINATION

**NOTE TO APPLICANT:** Pursuant to WAC 173-153-130(8), the applicant is not permitted to proceed to act on the proposal until Ecology makes a final decision affirming, in whole or in part, the board's recommendation. It is advised that the applicant not proceed until the appeal period of Ecology's decision is complete.

**NOTE TO AUTHOR:** Read the instructions for completing a water conservancy board report of examination. Use the Tab key to move through the form or with your mouse, select the fields to enter information.

☒ Surface Water      ☐ Ground Water

Date Application Received	February 28, 2022	Water Right Document Number (i.e., claim, permit, certificate, etc.)	SWC 4057
Water Right Priority Date	August 24, 1949	Board-Assigned Change Application Number	SPOK-22-01
Name: <b>Robert H. Greiff and Robert W. Greiff</b>		Phone: <b>(509) 466-2744</b>	Email:
Address (street): <b>6223 W Ridgeway Rd</b>		City: <b>Deer Park</b>	State: <b>WA</b> Zip: <b>99006</b>
<b>Changes Proposed:</b> <input type="checkbox"/> Change purpose <input type="checkbox"/> Add purpose <input checked="" type="checkbox"/> Add irrigated acres <input type="checkbox"/> Change point of diversion/withdrawal <input type="checkbox"/> Add point of diversion/withdrawal <input checked="" type="checkbox"/> Change place of use <input checked="" type="checkbox"/> Other (Temporary, Trust, Interties, etc.) <b>To enable irrigation of additional acreage.</b>			
<b>SEPA:</b> The board has reviewed the provisions of the State Environmental Policy Act of 1971, Chapter 43.21C RCW and the SEPA rules, chapter 197-11 WAC and has determined the <u>application</u> is: <input checked="" type="checkbox"/> Exempt <input type="checkbox"/> Not Exempt			

## BACKGROUND AND DECISION SUMMARY

Please include a map(s) reflecting all referenced existing and proposed point(s) of diversion or withdrawal and place(s) of use (RCW 90.03.260(7); WAC 173-153-070 (6)(c)).

Existing Right (Tentative Determination)							
Maximum cub ft/second	0.12 cfs	Maximum gal/minute					
Maximum acre-ft/yr	not specified	Describe Type(s) of use, and period(s) of use	irrigation of 12 acres during irrigation season				
Source	an unnamed spring		Tributary of (if surface water)		Wethey Creek		
At a Point Located: Parcel No.	27044.9004	1/4	NW	1/4	SE	Section	04
Township N.	27N	Range	42E	WRIA	55	County	Spokane
<b>LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED</b>							
Type detailed legal description of the place of use:  W1/2 of SE1/4 of Sec. 4, Twp. 27 N., Rge. 42 E.W.M.							
Parcel no.	27044.9004	1/4	W1/2	1/4	SE1/4	Section	04
Township N.	27N	Range	42E	WRIA	55	County	Spokane



Proposed Use							
Maximum cub ft/second	0.12 cfs		Maximum gal/minute				
Maximum acre-ft/yr	48 ac-ft/yr		Describe Type(s) of use, and period(s) of use		48 ac-ft/yr for seasonal irrigation of 112 acres Not to exceed 112 acres in combination under SWC 4057, GWC 4589-A, and G3-01333C.		
Source	an unnamed spring (no change)			Tributary of (if surface water)		Wetthey Creek	
At a Point Located: Parcel No.	27044.9004	1/4	NW	1/4	SE	Section	04
Township N.	27N	Range	42E	WRIA	55	County	Spokane
<b>LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED</b>							
Type detailed legal description of the place of use: W1/2SE1/4 Sec. 4 and W1/2NE1/4 Sec. 9, T. 27 N., R. 42 E.W.M.							
Parcel #: 27044.9004, 27091.9036, 27091.9037.							
Parcel no.	See above.	1/4	See above.	1/4	See above.	Section	04, 09
Township N.	27N	Range	42E	WRIA	55	County	Spokane

Board's Decision on the Application							
Maximum cub ft/second	0.12 cfs		Maximum gal/minute				
Maximum acre-ft/yr	32.8 ac-ft/yr		Describe Type(s) of use, and period(s) of use		32.8 ac-ft/yr (all consumptive) for seasonal irrigation of 112 acres. Not to exceed 112 acres in combination under SWC 4057, GWC 4589-A, and G3-01333C.		
Source	an unnamed spring			Tributary of (if surface water)		Wetthey Creek	
At a Point Located: Parcel No.	27044.9004	1/4	NW	1/4	SE	Section	04
Township N.	27N	Range	42E	WRIA	55	County	Spokane
<b>LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED</b>							
Type detailed legal description of the place of use: W1/2SE1/4 Sec. 4 and W1/2NE1/4 Sec. 9, T. 27 N., R. 42 E.W.M.							
Parcel #: 27044.9004, 27091.9036, 27091.9037.							
Parcel no.	See above.	1/4	See above.	1/4	See above.	Section	04, 09
Township N.	27N	Range	42E	WRIA	55	County	Spokane

Description of Proposed Works
Description of water diversion/withdrawal, conveyance, and distribution system: A 10hp pump delivers water to a pressure-pipe system with risers for connection, primarily, to wheel line / side roll sprinkler irrigation equipment.

Development Schedule	
Begin project by this date (At least 75 days after Board's ROD issuance):	Begun.
Complete project by this date:	Complete.
Complete change & put water to full use by this date:	December 1, 2027

## Report

**NOTE TO AUTHOR:** This form reflects the minimum regulatory requirements as required in WAC 173-153-130(6). In accordance with WAC 173-153-130(5), "It is the responsibility of the water conservancy board to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination." **Completion solely of the minimum regulatory requirements may not constitute a fully documented decision.**

### BACKGROUND [See WAC 173-153-130(6)(a)]

On Month February, day 28, year 2022.

Name of applicant: Robert H. Greiff and Robert W. Greiff of City: Deer Park State: WA filed an application for change (to do what e.g., POU, POD, POW, etc) to change the quantity of use from undefined to 48 ac-ft/yr, to change the period of use to "seasonal", to increase the irrigation area to be up to 112 ac, and to change the place of use under (Water right number, e.g., certificate, permit,

claim, superseding document #, cert of change #): Surface Water Certificate (SWC) No. 4057. The application was accepted at an open public meeting

on Month: February, day: 28, year: 2022, and the board assigned application number(XXXX-YR-##): SPOK-22-01.

### *Attributes of the water right as currently documented*

Name on certificate, claim, permit: William Greiff

Water right document number (e.g., cert #, claim #, permit #, superseding document #): SWC 4057

As modified by certificate of change number: n/a.

Priority date, first use Date of priority or claimed date water was originally first put to beneficial use : August 24, 1949

Water quantities: Qi (Instant qty): 0.12 cfs Qa (Annual qty): unspecified acre ft./ year

Source ( well, river, etc): an unnamed spring

Point of diversion/withdrawal (Distance from ¼¼, Section, Township, Range EWM): Approx. 2500 ft west and 1600 ft north of the SE corner of Sec. 04, T27N, R42EWM.

Purpose of use: irrigation Number of Acres if Irrigation: 12 acres (ac)

Period of use: not specified

Place of use: W1/2 of SE1/4 of Sec. 4, Twp. 27 N., Rge. 42 E.W.M.

Existing provisions (family farm act, interruptable, etc.): [Language from permit] "It is also provided that no diversion shall be made when the flow of Wethey Creek recedes to 0.75 c.f.s. as measured at its mouth and diversion intake shall be tightly screened with wire having a mesh opening not greater than .125 (1/8) inch."

### *Tentative determination of the water right*

The tentative determination is provided on the front page of this report.

### *History of water use*

Describe the historical water use information that was considered by the board:

The applicant filed three closely related change applications on certificates SWC 4057, GWC 4589-A and G3-01333C. Certificate 4057 authorizes an unnamed spring as its source. Certificates 4589-A and G3-01333C each issued for "a well" as source. Historically, a single well has been used to supply both 4589-A and G3-01333C. The spring and well are in close proximity to one another, and are adjacent to Wethey Creek. Wethey Creek is a tributary to Dragoon Creek, which in turn joins the Little Spokane River between river miles 21 and 22. The applications were given board Nos. SPOK-22-01, SPOK-22-02 and SPOK-22-03, respectively (change applications filed on Ecology Record/Document Nos. S3-\*09045CWRIS, G3-\*06512CWRIS and G3-01333CWRIS). This report addresses SPOK-22-01, but for convenience all three applications will be discussed together. The historic water use considered by the board included Washington Department of Ecology (Ecology) public

records, information provided by the applicant's consultant, and a site inspection. According to information provided by the applicant, the lands relating to the change applications have been under cultivation by three generations of the Greiff family. Robert H. Greiff grew up on the farm, and continues to work the farm together with his son Robert W. Greiff. Robert H. Greiff's father William Greiff applied for the earliest water right No. 4057 in 1949. The two well water rights were applied for in 1962 and 1968.

The farm has been consistent in its water use over the years, in a stable rotation of alfalfa hay, grass, oats, small grains, wheat and triticale. For over 50 years the well and spring have been used in combination to supply an integrated system, and the water rights likewise have been used in combination.

The crops have been irrigated by pumping from the sources into a common mainline, with risers to connect to wheel lines which are then moved in sets across the fields.

The cropping program used by the Greiff family allows for water to be used more or less continuously throughout the irrigation season, by arranging the crops so that fields being dried and hayed are alternated in sequence while other fields continue under irrigation.

A complication arises because for the past 50 years the applicant has irrigated more than the total combined limit of 37 acres authorized by the three certificates. The certificates only authorize use of water north of Ridgeway Road, which runs due east and west, but the farm extends to include lands south of the road. Based on aerial photos, water right file documentation, and the first-hand experience related by Mr. Greiff, all of the lands north and south have been irrigated since the 1970s. According to Mr. Greiff, he thought his water rights allowed this. When he received a letter from the Washington Department of Ecology (Ecology) in 2019 inquiring about rights for the land south of the road, he requested assistance from a consultant. The consultant confirmed that the certificates limited the use area to north of Ridgeway Rd. Mr. Greiff then irrigated the 37 acres north of Ridgeway Rd. during 2020-2021.

There are no flow meters to measure use. For this reason, historic water use information considered by the board focused on the crop demand method (AgWeatherNet climate data and model), along with hours-run data collected during the 2020-2021 irrigation seasons. The applicant's consultant estimated water use from electrical energy consumption as an independent verification of use. Aerial photos are consistent with the described historic use.

#### *Previous changes*

Describe any previous change decisions associated with the water right:

n/a.

#### *SEPA*

The board has reviewed the proposed project in its entirety (Provide a detailed explanation of how the board complied with the State Environmental Policy Act):

**The project falls under categorical exemption from the State Environmental Policy Act (SEPA). The board considers that SEPA compliance has been met for this project.**

#### *Other*

Provide any other pertinent information relative to the background of this water right:

**On August 22, 2022 the board issued a decision on the application as originally filed. After subsequent discussion with Ecology, on November 15, 2022 the board decided to withdraw the decision. The current decision addresses the issues raised and includes an amendment to the application. The amendment increased requested irrigation acres from 100 to 112 acres, non-additive to the other two water rights.**

**The information or conclusions in this section were authored and/or developed by (Name of Person): Tim Reierson, PE, dba Streamline Water Consulting LLC, consultant for applicant in consultation with board member Kevin Freeman.**

**COMMENT AND PROTESTS** [See WAC 173-153-130(6)(b)]

Public notice of the application was given in the (Name of Publication(s): **The Spokesman-Review**  
on Dates Published: **April 1 and April 8, 2022.** Protest period ended on (end date of protest period): **on or around May 8, 2022.** **An amended notice was published in The Spokesman-Review January 2 and 9, 2023. The application as amended requested an irrigation area of 112 acres, compared to 100 acres originally advertised.**

There were # \_\_\_\_\_ or no ☒ protests received during the 30 day protest period. In addition, no ☒ or # \_\_\_\_\_ oral and written comments were received at an open public meeting of the board or other means as designated by the board.

Date (protest/comment received): \_\_\_\_\_

This was recognized by the board as a ☐ Protest ☐ Comment

Name/address of protestor/commenter: \_\_\_\_\_

Issue (describe issues raised): \_\_\_\_\_

Board's analysis (board's response to the protest/comment): \_\_\_\_\_

***NOTE to author: Repeat this table as necessary to describe each protest or comment (attach a separate sheet if needed)***

***Other***

Provide any other pertinent information relative to the comments and protests receive:

n/a.

**The information or conclusions in this section were authored and/or developed by (Name of Person): Tim Reierson in consultation with board member Kevin Freeman.**

**INVESTIGATION** [See WAC 173-153-130(6)(c)]

The following information was obtained from a site inspection conducted by (person(s)): **board member Kevin Freeman**  
on (date of field exam): **April 29, 2022**, technical reports, research of department records (list other references, if any) \_\_\_\_\_  
and conversations with the applicant and/or other interested parties.

***Proposed project plans and specifications***

Describe proposed use of water to include # of connections, method of irrigation, type of crop, commercial use, etc. Also describe any issues related to development, such as the proposed development schedule and an analysis of the effect of the proposed transfer on other water rights, pending change applications & instream flows established under state law.

**Proposed Use, Irrigation Method, Type of Cropping.** The proposed use will be a continuation of the historic farming practices at the farm by resuming irrigation south of Ridgeway Road. The maximum total irrigation area proposed is 112 acres. To accomplish this will require deficit irrigation at times, depending on the acres farmed in a given year and the cropping planted. The applicant intends to continue using wheel line irrigation but would have the option to consider other methods if they so choose. With the benefit of flow meter readings, the applicant will be able to gauge water use through the course of the season to stay within water right limits. For certificate 4057, the annual volume and season of use are unspecified. The applicant proposes a 48 inch average water duty be adopted, for a total of 48 af/yr in annual volume, and to use the standard language of "seasonal" irrigation. For certificate

4589-A, the season of use is not specified and the applicant proposes likewise to use "seasonal" irrigation.

**Development Schedule.** The applicant requests a five year time frame for adding irrigation acres and gaining experience with a sustainable cropping pattern, under the limitations imposed. Proof of Appropriation would be due December 1, 2027. The project is begun and construction is complete.

**Effect of Proposed Change/Transfer.** The effect of the proposed change/transfer would be to authorize the farm to return to practices similar to past history, subject to monitoring actual water use by flow meter.

**Other Water Availability Considerations.** There is a low flow condition within the approval permit that issued for SWC 4057. Mr. Greiff related that the spring source has never had a shortage of water, and that no call has ever been made based on the low flow condition at the mouth of Wethey Creek. The low-flow condition is noted as a part of the water right authorization limitations, and will continue in force.

***Other water rights appurtenant to the property (if applicable)***

Describe any other water rights or other water uses associated with both the current and proposed place of use and an explanation of how those other rights or uses will be exercised in conjunction with the right proposed to be transferred.

**There are no other state-issued water rights associated with the current and proposed places of use. There are two residences and a farm museum within the properties owned by the applicant, served by their own wells under the permit exemption at RCW 90.44.050.**

***Public Interest (groundwater only)***

The proposed transfer is subject to RCW 90.44.100 and therefore, cannot be detrimental to the public interest, including impacts on any watershed planning activities. Provide an analysis of the transfer as to whether it is detrimental to the public interest, including impacts on any watershed planning activity. Public interest is not considered if the proposed water right is authorized under RCW 90.03.380 exclusively.

**Applicable to groundwater rights only.** For GWC 4589-A and G3-01333C, the board finds that the project is a continuation of longstanding agricultural practices, consistent with land use designations for the area. Provided that the quantity of water used is not increased, and the consumptive use of water is not increased, no impacts will occur on any watershed planning activity. The project is located within the area of the Little Spokane Watershed Plan (Water Resource Inventory Area [WRIA] 55), which was recently subject of a Watershed Plan Implementation Assessment (Ecology Publication 22-11-008 dated February 2022). The assessment contains links to extensive information about watershed planning activities within WRIA 55.

***Tentative Determination***

In order to make a water right change decision, the Board must make a tentative determination on the validity and extent of the right. The Board has made the tentative determination as displayed upon the first page of this report. There are several circumstances that can cause the board's tentative determination to differ from the stated extent of the water right within water right documentation. Water right documents attempt to define a maximum limitation to a water right, rather than the actual extent to which a water right has been developed and maintained through historic beneficial use. Additionally, except for a sufficient cause pursuant to RCW 90.14.140, water rights, in whole or in part, not put to a beneficial use for five consecutive years since 1967 may be subject to relinquishment under Chapter 90.14.130 through 90.14.180 RCW. Water rights may additionally be lost through abandonment. The Board's tentative determination was based upon the following findings. Describe any information indicating that an existing water right or portion of a water right has been relinquished or abandoned due to nonuse and the basis for the determination.

**Technical information provided by the applicant was referenced by the board to evaluate the facts of historic water use for purposes of making a tentative determination of extent and validity for the water rights as described next.**

**Instantaneous pumping capacity.** The applicant's consultant related that the 10hp pump is used at the spring, and a 5hp pump from the well which when operated together can produce the 204 gpm total authorized by the water rights.

**Well source for GWC 4589-A.** A gap in time was noted between certificate issuance (August 1963) and final construction of the well source (summer 1965). The applicant's consultant provided information from Mr.

Greiff about these circumstances within a May 23, 2022 Technical Memorandum, and submitted a legal opinion from attorney Tom McDonald dated August 1, 2022 about the validity of the water right for purposes of the application for change. The board concurs that the water right certificate can be evaluated based on beneficial use from the well.

**Annual volume by crop demand method.** Cropping over the long-term history has been similar to the present. The tentative determination considers the combined authorization of the certificates, which is limited to 37 acres, and each water right individually. The years 2020-2021 were confined to 37 acres located as authorized, within the portion of the farm north of Ridgeway Rd. Crop irrigation requirements (not including application efficiency) were obtained from AgWeathernet model results for the Green Bluff climate station, located 10 miles easterly. An irrigation season from April 1 through October 1 was used. Specific designations for oats and triticale are not given within AgWeathernet but can be approximated under Spring Grains or Winter Wheat, depending on planting times. The crop irrigation requirement, expressed in inches of water applied over an area, is then divided by the application efficiency of the irrigation equipment to arrive at the total irrigation requirement. Ecology guidance document GUID 1210 states the average/typical total application efficiency for wheel lines is 75%. This factor was used to calculate the total irrigation requirement each year, for each crop. The values, paired with the crop requirement, are as follows:

Alfalfa:	2017 (42in, 56in); 2018 (40in, 53in); 2019 (38in, 51in); 2020 (40in, 53in); 2021 (44in, 58in).
Grass (Pasture/Turf):	2017 (37in, 49in); 2018 (35in, 46in); 2019 (33in, 44in); 2020 (35in, 47in); 2021 (38in, 51in).
Spring Grains:	2017 (22in, 30in); 2018 (22in, 29in); 2019 (22in, 29in); 2020 (20in, 27in); 2021 (26in, 35in).
Winter Wheat:	2017 (15in, 20in); 2018 (16in, 21in); 2019 (16in, 22in); 2020 (15in, 20in); 2021 (19in, 26in).

The consumptive use, which is needed for the annual consumptive quantity estimate, is calculated using a percentage of the total irrigation requirement, and is specific to the irrigation equipment and management practices. Ecology guidance document GUID 1210 states the typical/average percent consumptive use is 85% of the total irrigation requirement. When less than the full crop demand is applied under similar conditions, the consumptive use percent goes up and yield goes down compared to the average.

**Total annual volume by hours-run method.** As an independent method to estimate water use on the 37 acres of alfalfa during 2020-2021, the applicant kept records of wheel line run times. The applicant ran two wheel lines at approximately 90-100 gpm each, 2733 hrs during 2020 and 4309 hrs during 2021, equating to 91 af (30 inch average duty) in 2020 and 143 af (46 inch average duty) in 2021. The 2021 use represented full use of the water rights but supplying only 80% of the irrigation demand for maximum crop production, based on the year 2021 AgWeathernet prediction for alfalfa. During 2020, the applicant had mechanical and electrical problems, causing significant interruption in supply and reducing the amount of water used.

**Total annual volume by pump energy use method.** The applicant's consultant estimated water use from electrical energy consumption as another independent verification of use. Based on average operating conditions of 90 psi discharge pressure, 30 feet lift and losses, and wire to water efficiency of 65%, the following estimates of total annual volume were made: 2015 (147af), 2016 (98af), 2017 (75af), 2018 (122af), 2019 (114af), 2020 (87af), and 2021 (143af). All years except 2020 and 2021 reflect irrigation both north and south of Ridgeway Rd. The estimates are in reasonable agreement with the hours-run method for 2020-2021.

To estimate use at the individual water right level when there were multiple crops, it was necessary for Mr. Greiff to estimate crop applications for alfalfa, triticale and oats prior to 2020. For 2017-2019, Mr. Greiff estimated they used 24 inches on alfalfa and 12 inches on triticale and oats under deficit irrigation practices.

Using these estimates, for each water right, the applicant's consultant provided an accounting of annual water use for the previous five year period from 2017-2021 (Reierson, 11/8/2022 memo updated 2/5/2023). During 2018 the applicant raised triticale and alfalfa; during 2019 oats and alfalfa; and during 2017 and 2020-2021, all alfalfa. During 2020-2021 for all three rights combined, the average water duties were estimated from power records as approximately 29.2 inches in 2020 and 44.1 inches in 2021, with all acres in alfalfa cropping. Because the AgWeathernet estimates were higher than other more direct estimate estimates (such as power use and hours-run), the lower use estimates were used. The resulting estimates of annual use for each water right are:

SWC 4057. 2017: 24 af, 2018: 18 af, 2019: 18 af, 2020: 29.2 af, 2021: 36.35 af.  
GWC 4589-A. 2017: 10 af, 2018: 9.3 af, 2019: 9.3 af, 2020: 12.2 af, 2021: 18.4 af.  
G3-01333C. 2017: 40 af, 2018: 29 af, 2019: 29 af, 2020: 48.7 af, 2021: 68 af.

For all three water rights, the highest two years of use were 2020 and 2021. For each water right, the average of these two years' annual volume is given below. The water right quantities, before being reduced by averaging, are given in parentheses.

SWC 4057. Average of highest 2 years: 32.8 ac-ft (48 ac-ft, estimated—not given on certificate).  
GWC 4589-A. Average of highest 2 years: 15.3 ac-ft (20 ac-ft).  
G3-01333C. Average of highest 2 years: 58.4 ac-ft (68 ac-ft).

Expressed as average irrigation duties for each water right, these are:

SWC 4057.  $(32.8\text{ac-ft}/12\text{ac}) = 2.7 \text{ ft or } 33 \text{ in.}$   
GWC 4589-A.  $(15.3\text{ac-ft}/5\text{ac}) = 3.1 \text{ ft or } 37 \text{ in.}$   
G3-01333C.  $(58.4\text{ac-ft}/20\text{ac}) = 2.9 \text{ ft or } 35 \text{ in.}$

**Consumptive use.** The AgWeatherNet prediction of water needs for crop demand during 2020-2021 was 40 inches in 2020 and 44 inches in 2021 (not including any application efficiency). Both years were unusually hot and dry. The two-year averages reduced the annual volume for each water right below the predicted crop demands, indicating that the total annual volume remaining for each water right will not exceed historic consumptive use.

**Year 2022 water use.** For the year 2022, the annual use for each water right was considered by the board but because of low use, had no effect on the two-year averages of high use years. The specific estimates of use for each water right during 2022 were: SWC 4057, maximum of 26 ac-ft; GWC 4589-A, 0 ac-ft; G3-01333C, 0 ac-ft.

After review of information provided by the applicant's consultant and the applicant about annual cropping, irrigation equipment, specific on-farm irrigation practices, AgWeatherNet model estimates of crop demand, energy consumption by pumping equipment, and irrigation wheel line run-time data, the board finds tentatively that the following quantities are valid:

SWC 4057. 0.12 cfs, 48 ac-ft/yr for seasonal irrigation of 12 acres.  
GWC 4589-A. 50 gpm, 20 af/yr for seasonal irrigation of 5 acres.  
G3-01333C. 100 gpm, 68 af/yr for irrigation of 20 acres from April 1 to October 1 each year.

All quantities are additive.

**Annual Consumptive Quantity.** The above information provides the necessary estimates for calculating the annual consumptive quantity (RCW 90.03.380).

Under Ecology procedure PRO 1210, Paragraph 6, "The permit writer has discretion to add a reasonable return flow for the new use, provided that the quantity does not exceed the authorized amount of the water right." The applicant's consultant estimated that future total use should be considered 95-100% consumptive due to deficit irrigation. The board finds tentatively that the following quantities are valid, incorporating the annual consumptive quantities at 100% consumption and with the acreage increase shown:

SWC 4057. 0.12 cfs, 32.8 ac-ft/yr (total and consumptive) for seasonal irrigation of 112 acres.  
GWC 4589-A. 50 gpm, 15.3 ac-ft/yr (total and consumptive) for seasonal irrigation of 112 acres.  
G3-01333C. 100 gpm, 58.4 ac-ft/yr (total and consumptive) for irrigation of 112 acres from April to October 1 each year.

*Geologic, Hydrogeologic, or other scientific investigations (if applicable)*

Describe the results of any geologic, hydrogeologic, or other scientific investigations that were considered by the board and how this information contributed to the board's conclusions.

**May 23, 2022 -- Technical Memorandum; water right study by consultant Tim Reiersen, PE to estimate valid extent of water rights, annual consumptive quantity, and review water spreading proposal.**

**November 8, 2022 -- Technical Memorandum Supplement (Reiersen); divided the water use estimates separately to each water right.**

**February 5, 2023 -- Technical Memorandum 2nd Supplement (Reiersen) -- Update to the November 8, 2022 memo incorporating corrections from Ecology and providing year 2022 water use estimates.**

**This information informed the board's conclusions about tentative determinations of extent and validity of each water right and annual consumptive quantity for purposes of RCW 90.03.380 requirements to increase irrigation area.**

#### ***Other***

Provide any other pertinent information relative to the investigation of this application.

n/a.

**The information or conclusions in this section were authored and/or developed by (Name of Person): Tim Reiersen in consultation with board member Kevin Freeman.**

#### **CONCLUSIONS** [See WAC 173-153-130(6)(d)]

##### ***Tentative determination (validity and extent of the right)***

Describe whether, and to what extent, a valid water right exists.

**It is tentatively determined that valid rights exist as follows:**

**SWC 4057. 0.12 cfs, 48 ac-ft/yr for seasonal irrigation of 12 acres.**

**GWC 4589-A. 50 gpm, 20 af/yr for seasonal irrigation of 5 acres.**

**G3-01333C. 100 gpm, 68 af/yr for irrigation of 20 acres from April 1 to October 1 each year.**

**All quantities are additive.**

##### ***Relinquishment or abandonment concerns***

Describe any relinquishment or abandonment of the water right associated with the water right transfer application as discussed in the investigation section of this report.

n/a.

##### ***Hydraulic analysis***

Describe the result, as adopted by the board, of any hydraulic analysis done related to the proposed water right transfer.

n/a.

##### ***Consideration of comments and protests***

Discuss the board's conclusions of issues raised by any comments and protests received.



n/a.

### ***Impairment***

Describe how or if the transfer proposal will impair existing rights of others.

**The transfer proposal will not impair existing rights of others because the historic sources will continue to be used, but in lowered overall quantities. In addition, the consumptive use will not be increased, with the conditions and limitations included within the board's decision. Verification of consumptive use can be made using the same estimates as described within Ecology GUID 1210, combined with metering being added from the sources going forward.**

### ***Public Interest***

If the proposed transfer is authorized pursuant to RCW 90.44.100, describe whether it is detrimental to the public interest. Public interest shall not be considered if the proposed transfer is authorized pursuant to RCW 90.03.380 exclusively.

**n/a for SWC 4057. For GWC 4589-A and G3-01333C the board concludes that the changes will not be detrimental to the public interest.**

### ***Other***

The board also considered the previous provisions associated with the water right as identified in the background section of this report when making its decision. Provide any other pertinent information relative to the board's conclusions.

**SWC 4057. The Wethey Creek minimum flow provision within the original permit is included, along with an updated fish screening provision.**

**SWC 4057, GWC 4589-A, G3-01333C. Up-to-date provisions for flow metering, site access and final proof inspection are added.**

### **DECISION** [See WAC 173-153-130(6)(e)]

Provide a complete description of the board's decision, fully and comprehensively addressing the entire application proposal.

**The board's decision is to conditionally approve the requested change/transfer proposal, in full description as follows:**

#### **1(a). Quantification of current water right:**

**SWC 4057. 0.12 cfs, 48 ac-ft/yr for seasonal irrigation of 12 acres.**

**GWC 4589-A. 50 gpm, 20 af/yr for seasonal irrigation of 5 acres.**

**G3-01333C. 100 gpm, 68 af/yr for irrigation of 20 acres from April 1 to October 1 each year.**

#### **1(b). Quantification of transferable quantities:**

**SWC 4057. 0.12 cfs, 32.8 ac-ft/yr (total and consumptive) for seasonal irrigation of 112 acres.**

**GWC 4589-A. 50 gpm, 15.3 ac-ft/yr (total and consumptive) for seasonal irrigation of 112 acres.**

**G3-01333C. 100 gpm, 58.4 ac-ft/yr (total and consumptive) for irrigation of 112 acres from April 1 to October 1 each year.**

#### **2. Source locations for change/transfer (no change):**

**SWC 4057.**

**within NW1/4SE1/4 Sec. 4, T27N, R42EWM.**

**Approx. 1850 feet N and 2150 feet W of the SE corner of Sec. 4.**

**Within Parcel No. 27044.9004. Lat/Long: 47.865218°, -117.506528°.**

**GWC 4589-A.**

within W1/2SE1/4 Sec. 4, T27N, R42EWM.

Approx. 1600 feet N and 2550 feet W of SE corner of Sec. 4.

Parcel No. 27044.9004. Lat/Long: 47.864486°, -117.508096°.

G3-01333C.

w/in SW1/4NW1/4SE1/4 Sec. 4, T27N, R42EWM.

As described on face of certificate: 1140 feet south and 300 feet east from the center of Sec. 4;

More accurately described as: Approx. 1600 feet N and 2550 feet W of SE corner Sec. 4.

Parcel No. 27044.9004. Lat/Long: 47.864486°, -117.508096°.

**3. Place of use for change/transfer:**

SWC 4057, GWC 4589-A and G3-01333C (same description for all).

W1/2SE1/4 Sec. 4 and W1/2NE1/4 Sec. 9, T. 27 N., R. 42 E.W.M.

Parcel Nos. 27044.9004, 27091.9036, 27091.9037.

Provide any other pertinent information relative to the board's decision.

n/a.

**The information or conclusions in this section were authored and/or developed by (Name of Person): Tim Reiersen in consultation with board member Kevin Freeman.**

**PROVISIONS** [See WAC 173-153-130(6)(f)]

*Conditions and limitations*

Identify any conditions and limitations recommended as part of an approved transfer, and/or any other corrective action necessary to maintain the water use in compliance with state laws and regulations.

**Combined use limit.** The quantities authorized are not to exceed 106.5 ac-ft/yr for irrigation of 112 acres in combination among the following: Surface Water Certificate (SWC) 4057, Ground Water Certificate (GWC) 4589-A and certificate G3-01333C. The annual quantity is considered all consumptive use.

**Measurements, Monitoring, Metering, and Reporting.** An approved measuring device must be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", chapter 173-173 WAC, which describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology (Ecology) for modifications to some of the requirements.

Recorded water use data shall be submitted electronically by January 31 each year. To set up an Internet reporting account, contact the Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Regional Office for forms to submit your water use data.

**Proof of Appropriation.** Consistent with the development schedule given in this report (unless extended by Ecology), the water right holder must file a Notice of Proof of Appropriation (PA) of Water with Ecology. The PA documents the project is complete and all the water needed has been put to full beneficial use (perfected). In order to verify the extent of water use under this permit, an inspection of water use is typically required, known as a "proof exam". After filing the PA, the water right holder's next step is to hire a Certified Water Rights Examiner (CWRE) to conduct this proof exam. A list of CWREs is provided to the water right holder upon filing the PA with Ecology. The final water right document, a water right certificate, then may issue based upon the findings of the CWRE. Statutory county and state filing fees may apply prior to certificate issuance.

**Schedule and Inspections.** Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

**Provisions applicable to SWC 4057 only:**

**SWC 4057 only. Fish Screening Criteria.** The intake(s) shall be screened in accordance with Department of Fish and Wildlife screening criteria (pursuant to RCW 77.57.010, RCW 77.57.070, and RCW 77.57.040). Contact the Department of Fish and Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091. Attention: Habitat Program, Phone: (360) 902-2534 if you have questions about screening criteria. <http://wdfw.wa.gov/about/contact/>.

**SWC 4057 only.** It is also provided that no diversion shall be made when the flow of Wethey Creek recedes to 0.75 c.f.s. as measured at its mouth.

*Mitigation (if applicable)*

Describe any requirement to mitigate adverse effects of the project. Mitigation may be proposed by the applicant or the board and be required in the board's decision.

n/a.

*Construction Schedule*

Provide a schedule for development and completion of the water right transfer, if approved in part or in whole that includes a definite date for completion of the transfer and application of the water to an authorized beneficial use.

**The project is begun and construction is complete. Proof of Appropriation shall be due December 1, 2027 unless extended by Ecology.**

*Other*

Provide any other pertinent information relative to provisions

n/a.

**The information or conclusions in this section were authored and/or developed by (Name of Person): Tim Reiersen in consultation with board member Kevin Freeman.**

The undersigned board commissioner certifies that he/she understands the board is responsible “to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination.” [WAC 173-153-130(5)] The undersigned therefore, certifies that he/she, having reviewed the report of examination, knows and understands the content of this report and concurs with the report’s conclusions.

Signed at Spokane Valley, Washington  
(City)  
This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_  
Date (Day) (Month) (Year)

Name of Board Representative: \_\_\_\_\_  
Name of Water Conservancy Board: Spokane County Water Conservancy Board  
Signature: \_\_\_\_\_

## Tentative Determination

Technical information provided by the applicant was referenced by the board to evaluate the facts of historic water use for purposes of making a tentative determination of extent and validity for the water rights as described next.

Instantaneous pumping capacity. The applicant's consultant related that the 10hp pump is used at the spring, and a 5hp pump from the well which when operated together can produce the 204 gpm total authorized by the water rights.

Well source for GWC 4589-A. A gap in time was noted between certificate issuance (August 1963) and final construction of the well source (summer 1965). The applicant's consultant provided information from Mr. Greiff about these circumstances within a May 23, 2022 Technical Memorandum, and submitted a legal opinion from attorney Tom McDonald dated August 1, 2022 about the validity of the water right for purposes of the application for change. The board concurs that the water right certificate can be evaluated based on beneficial use from the well.

Annual volume by crop demand method. Cropping over the long-term history has been similar to the present. The tentative determination considers the combined authorization of the certificates, which is limited to 37 acres, and each water right individually. The years 2020-2021 were confined to 37 acres located as authorized, within the portion of the farm north of Ridgeway Rd. Crop irrigation requirements (not including application efficiency) were obtained from AgWeatherNet model results for the Green Bluff climate station, located 10 miles easterly. An irrigation season from April 1 through October 1 was used. Specific designations for oats and triticale are not given within AgWeatherNet but can be approximated under Spring Grains or Winter Wheat, depending on planting times. The crop irrigation requirement, expressed in inches of water applied over an area, is then divided by the application efficiency of the irrigation equipment to arrive at the total irrigation requirement. Ecology guidance document GUID 1210 states the average/typical total application efficiency for wheel lines is 75%. This factor was used to calculate the total irrigation requirement each year, for each crop. The values, paired with the crop requirement, are as follows:

Alfalfa:	2017 (42in, 56in); 2018 (40in, 53in); 2019 (38in, 51in); 2020 (40in, 53in); 2021 (44in, 58in).
Grass (Pasture/Turf):	2017 (37in, 49in); 2018 (35in, 46in); 2019 (33in, 44in); 2020 (35in, 47in); 2021 (38in, 51in).
Spring Grains:	2017 (22in, 30in); 2018 (22in, 29in); 2019 (22in, 29in); 2020 (20in, 27in); 2021 (26in, 35in).
Winter Wheat:	2017 (15in, 20in); 2018 (16in, 21in); 2019 (16in, 22in); 2020 (15in, 20in); 2021 (19in, 26in).

The consumptive use, which is needed for the annual consumptive quantity estimate, is calculated using a percentage of the total irrigation requirement, and is specific to the irrigation equipment and management practices. Ecology guidance document GUID 1210 states the typical/average percent consumptive use is 85% of the total irrigation requirement. When less than the full crop demand is applied under similar conditions, the consumptive use percent goes up and yield goes down compared to the average. For the annual consumptive quantity estimate, the five-year look-back was limited to irrigated farmland north of the road and limited to 37 acres. For the time-period from 2017-2021 these lands were farmed in alfalfa hay. In 2020, there was a planting of oats, which was then overplanted with a new stand of alfalfa that year. Results for alfalfa cropping on 37 acres, using the total crop requirement water duties given above are: 2017 (173af total, 147af consumptive); 2018 (164af total, 140af consumptive); 2019 (157af total, 134 af consumptive); 2020 (164af total, 140 af consumptive); 2021 (180af total, 153af consumptive).

Total annual volume by hours-run method. As an independent method to estimate water use on the 37 acres of alfalfa during 2020-2021, the applicant kept records of wheel line run times. The applicant ran two wheel lines at approximately ~~180-90-100~~ gpm each, 2733 hrs during 2020 and 4309 hrs during 2021, equating to 91 af (30 inch average duty) in 2020 and 143 af (46 inch average duty) in 2021. The 2021 use represented full use of the water rights but supplying only 80% of the irrigation demand for maximum crop production, based on the year 2021 AgWeatherNet prediction for alfalfa. During 2020, the applicant had mechanical and electrical problems, causing significant interruption in supply and reducing the amount of water used.

Total annual volume by pump energy use method. The applicant's consultant estimated water use from electrical energy consumption as another independent verification of use. Based on average operating conditions of 90 psi discharge pressure, 30 feet lift and losses, and wire to water efficiency of 65%, the following estimates of total annual volume were made: 2015 (147af), 2016 (98af), 2017 (75af), 2018 (122af), 2019 (114af), 2020 (87af), and 2021 (143af). All years except 2020 and 2021 reflect irrigation both north and south of Ridgeway Rd. The estimates are in reasonable agreement with the hours-run method for 2020-2021.

~~The applicant's consultant recommended the following estimates for total beneficial use:—  
90 af for the year 2020 and 136 af for the year 2021 (limited to 136 af by water rights).~~

To estimate use at the individual water right level when there were multiple crops, it was necessary for Mr. Greiff to estimate crop applications for alfalfa, triticale and oats prior to 2020. For 2017-2019, Mr. Greiff estimated they used 24 inches on alfalfa and 12 inches on triticale and oats under deficit irrigation practices.

Using these estimates, for each water right, the applicant's consultant provided an accounting of annual water use for the previous five year period from 2017-2021 (Reierson, 11/8/2022 memo updated 2/5/2023). During 2018 the applicant raised triticale and alfalfa; during 2019 oats and alfalfa; and during 2017 and 2020-2021, all alfalfa. During 2020-2021 for all three rights combined, the average water duties were estimated from power records as approximately 29.2 inches in 2020 and 44.1 inches in 2021, with all acres in alfalfa cropping. Because the AgWeathernet estimates were higher than other more direct estimate estimates (such as power use and hours-run), the lower use estimates were used. The resulting estimates of annual use for each water right are:

SWC 4057. 2017: 24 af, 2018: 18 af, 2019: 18 af, 2020: 29.2 af, 2021: 36.35 af.

GWC 4589-A. 2017: 10 af, 2018: 9.3 af, 2019: 9.3 af, 2020: 12.2 af, 2021: 18.4 af.

G3-01333C. 2017: 40 af, 2018: 29 af, 2019: 29 af, 2020: 48.7 af, 2021: 68 af.

For all three water rights, the highest two years of use were 2020 and 2021. For each water right, the average of these two years' annual volume is given below. The water right quantities, before being reduced by averaging, are given in parentheses.

SWC 4057. Average of highest 2 years: 32.8 ac-ft (48 ac-ft, estimated—not given on certificate).

GWC 4589-A. Average of highest 2 years: 15.3 ac-ft (20 ac-ft).

G3-01333C. Average of highest 2 years: 58.4 ac-ft (68 ac-ft).

Expressed as average irrigation duties for each water right, these are:

SWC 4057.  $(32.8\text{ac-ft}/12\text{ac}) = 2.7 \text{ ft or } 33 \text{ in.}$

GWC 4589-A.  $(15.3\text{ac-ft}/5\text{ac}) = 3.1 \text{ ft or } 37 \text{ in.}$

G3-01333C.  $(58.4\text{ac-ft}/20\text{ac}) = 2.9 \text{ ft or } 35 \text{ in.}$

Consumptive use. The AgWeathernet prediction of water needs for crop demand during 2020-2021 was 40 inches in 2020 and 44 inches in 2021 (not including any application efficiency). Both years were unusually hot and dry. The two-year averages reduced the annual volume for each water right below the predicted crop demands, indicating that the total annual volume remaining for each water right will not exceed historic consumptive use.

Year 2022 water use. For the year 2022, the annual use for each water right was considered by the board but because of low use, had no effect on the two-year averages of high use years. The specific estimates of use for each water right during 2022 were: SWC 4057, maximum of 26 ac-ft; GWC 4589-A, 0 ac-ft; G3-01333C, 0 ac-ft.

After review of information provided by the applicant's consultant and the applicant about annual cropping, irrigation equipment, specific on-farm irrigation practices, Agweathernet model estimates of crop demand, energy

consumption by pumping equipment, and irrigation wheel line run-time data , the board finds tentatively that the following quantities are valid:

SWC 4057. 0.12 cfs, 48 ac-ft/yr for seasonal irrigation of 12 acres.

GWC 4589-A. 50 gpm, 20 af/yr for seasonal irrigation of 5 acres.

G3-01333C. 100 gpm, 68 af/yr for irrigation of 20 acres from April 1 to October 1 each year.

All quantities are additive.

Annual Consumptive Quantity. The above information provides the necessary estimates for calculating the annual consumptive quantity (RCW 90.03.380). ~~The highest two years of annual use are taken from the year 2020-2021 due to the acreage limitation of the water rights, for an estimate of:~~

~~$(90\text{af} + 136\text{af})/2 = 113\text{af}.$~~

Under Ecology procedure PRO 1210, Paragraph 6, "The permit writer has discretion to add a reasonable return flow for the new use, provided that the quantity does not exceed the authorized amount of the water right."

~~Considering that deficit management practices have been in use, the consumptive use factor is taken as 90% for evaluating past irrigation practice, year 2021 use accounting at 136af, resulting in 125 af/yr. Because this exceeds the annual consumptive use result (with 2 year averaging) of 113 af/yr it indicates that consumptive use will not be increased due to the change.~~ The applicant's consultant estimated that future total use should be considered 95-100% consumptive due to deficit irrigation. ~~The 113 af/yr combined limit is distributed to the original rights by reducing the annual volume for each in proportion to 113af:136af.~~ The board finds tentatively that the following quantities are valid, incorporating the annual consumptive quantities at 100% consumption and with the acreage increase shown:

SWC 4057. 0.12 cfs, 40-32.8 ac-ft/yr (total and consumptive) for seasonal irrigation of 400-112 acres.

GWC 4589-A. 50 gpm, 16-515.3 ac-ft/yr (total and consumptive) for seasonal irrigation of 400-112 acres.

G3-01333C. 100 gpm, 56-558.4 ac-ft/yr (total and consumptive) for irrigation of 400-112 acres from April to October 1 each year.

Geologic, Hydrogeologic, or other scientific investigations (if applicable)

**May 23, 2022 -- Technical Memorandum; water right study by consultant Tim Reiersen, PE to estimate valid extent of water rights, annual consumptive quantity, and review water spreading proposal.**

November 8, 2022 – Technical Memorandum Supplement (Reiersen); divided the water use estimates separately to each water right.

February 5, 2023 – Technical Memorandum 2<sup>nd</sup> Supplement (Reiersen) -- Update to the November 8, 2022 memo incorporating corrections from Ecology and providing year 2022 water use estimates. The board considers this work to represent the most current available

This information informed the board's conclusions about tentative determinations of extent and validity of each water right and estimates of historic use, total and consumptive use, annual consumptive quantity for purposes of RCW 90.03.380 requirements to increase irrigation area, and statement of the applicant's plan for expansion of acres without increasing consumptive use.