

From : Short
To : Kevin Freeman <kfreeman@inlandearth.com>
Subject : RE: RFI - Annual Consumptive Quantity Evaluation
Cc : Spangle, Herm (ECY) <HSPA461@ECY.WA.GOV>
Received On : 11/18/2022 11:21 AM

That's a great question and I'm sure we have something I can share. I'll need a little time to dig around in files to find one since they'll be associated with a change and not obvious from the water right name or number. I'm looping in Herm to see if he's got any good examples on deck – otherwise I'll need to consult with other members of our team after the holiday. If you can give me until the last week of the month, I'll have an example or two back out to you. Thanks for reaching out! - Jaime

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

From: Kevin Freeman
Sent: Friday, November 18, 2022 10:49 AM
To: Short, Jaime (ECY)
Subject: RFI - Annual Consumptive Quantity Evaluation

Ms. Short –

Coming from CRO, do you have an example of a consultant's report for determination of ACQ that (1) you feel is "well written, correct, and complete", and (2) that you'd be willing to share (either directly or I am happy to file a PRR if necessary)?

I'd like to see what a "good" ACQ determination looks like so I have a reference and then could educate myself and the Board when the withdrawn applications are re-submitted.

Any help would be appreciated. Again, thank you for your time.

Kind regards,

Kevin M. Freeman, PG | *Principal Geologist*
Inland Earth Sciences Corporation
8704 E. Dalton Avenue | Spokane, Washington 99212
O: (509) 563-5242 x700 | M: (509) 981-4747
kfreeman@inlandearth.com

From : Short
To : Kevin Freeman <kfreeman@inlandearth.com>
Subject : RE: RFI - Annual Consumptive Quantity Evaluation (Msg 1 of 2)
Cc : Spangle, Herm (ECY) <HSPA461@ECY.WA.GOV>
Received On : 12/16/2022 12:42 PM
Attachments : [Snake View Conservancy Baord decision.pdf](#)

Hi Kevin,

I apologize for taking so long to respond to your request with an example, but I have one now! Our scanning process was broken and recently repaired, thus the delay. I have attached a Board decision from Walla Walla County and will send the supporting documents in a second email. The project is much more complicated than the recent application in front of the Spokane Board but the evaluation approach can be scaled. Please let Herm or I know if you have any questions on these documents or any other issues in front of the Board. Thank you for your patience! - Jaime

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Water Resources Program, WA Dept. of Ecology
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From : Short
To : Kevin Freeman <kfreeman@inlandearth.com>
Subject : RE: RFI - Annual Consumptive Quantity Evaluation (Msg 2 of 2)
Cc : Spangle, Herm (ECY) <HSPA461@ECY.WA.GOV>
Received On : 12/16/2022 12:43 PM
Attachments : [Snake View supporting docs.pdf](#)

Here is the more relevant attachment describing the ACQ process. It was too large to attach to my initial email. - Jaime

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

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Walla Walla County
WATER CONSERVANCY BOARD
Application for Change/Transfer
Record of Decision

For Ecology Use Only
Received: **RECEIVED**
SEP 12 2022
Department of Ecology
Eastern Washington Office
Reviewed by: _____
Date Reviewed: _____

Applicant: Crown Farm Snake View, LLC

Application Number: WALL-22-03

This record of decision was made by a majority of the board at an open public meeting of the Walla Walla County Water Conservancy Board held on 9/7/22. The undersigned board commissioners certify that they each understand 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 each commissioner, having reviewed the report of examination, knows and understands the content of the report.

X Approval: The Walla Walla County Water Conservancy Board hereby **grants** conditional approval for the water right transfer described and conditioned within the report of examination on 9/7/22 and submits this record of decision and report of examination to the Department of Ecology for final review.

☐ **Denial:** The Walla Walla County Water Conservancy Board hereby **denies** conditional approval for the water right transfer as described within the report of examination on (date report of exam was signed) and submits this record of decision to the Department of Ecology for final review.

Signed:

Robert M Berger
Robert Berger, Chair
Walla Walla County Water Conservancy Board

Date: Sept 7, 2022
Approve ☒
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Joel Huesby, Member
Walla Walla County Water Conservancy Board

Date: _____
Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Nathan Rau
Nathan Rau, Member
Walla Walla County Water Conservancy Board

Date: 9/7/2022
Approve ☒
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Alternate
Walla Walla County Water Conservancy Board

Date: _____
Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Alternate
Walla Walla County Water Conservancy Board

Date: _____
Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

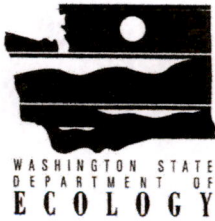
Mailed with all related documents to the Dept of Ecology Eastern Regional Office, and other interested parties on

If you have special accommodation needs or require this form in alternate format, please contact 360-407-6607 (Voice) or 711 (TTY) or 1-800-833-6388 (TTY).

Ecology is an equal opportunity employer

040-105(02/08)

Record of Decision No. (WR Change App Number)



Walla Walla County
WATER CONSERVANCY BOARD
Application for Change/Transfer
Record of Decision

For Ecology Use Only	
Received:	RECEIVED
Date Stamp	SEP 12 2022
Department of Ecology Eastern Washington Office	
Reviewed by:	_____
Date Reviewed:	_____

Applicant: Crown Farm Snake View, LLC

Application Number: WALL-22-03

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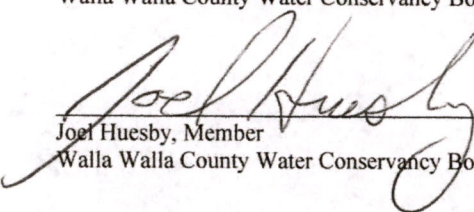
☐ **Denial:** The Walla Walla County Water Conservancy Board hereby **denies** conditional approval for the water right transfer as described within the report of examination on (date report of exam was signed) and submits this record of decision to the Department of Ecology for final review.

Signed:

Robert Berger, Chair
Walla Walla County Water Conservancy Board

Date: _____

Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐



Joel Huesby, Member
Walla Walla County Water Conservancy Board

Date: Sept 7, 2022

Approve ☒
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Nathan Rau, Member
Walla Walla County Water Conservancy Board

Date: _____

Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Alternate
Walla Walla County Water Conservancy Board

Date: _____

Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

Alternate
Walla Walla County Water Conservancy Board
☐

Date: _____

Approve ☐
Deny ☐
Abstain ☐
Recuse ☐
Other ☐

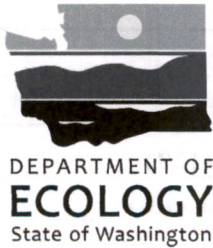
Mailed with all related documents to the Dept of Ecology Eastern Regional Office, and other interested parties on _____

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Ecology is an equal opportunity employer

040-105(02/08)

Record of Decision No. (WR Change App Number)



Board Name: **Walla Walla County Water Conservancy Board**

RECEIVED
SEP 12 2022
Department of Ecology
Eastern Washington Office

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	May 5, 2022	Water Right Document Number (i.e., claim, permit, certificate, etc.)	Surface Water Cert. S3-01062C
Water Right Priority Date	June 20, 1966	Board-Assigned Change Application Number	WALL-22-03
Name:	CROWN FARM SNAKE VIEW, LLC	Phone:	Email:
		(212) 977-3711	alexhoffman@petruspartners.com
Address (street):	3808 N. Sullivan Rd., Building N-15, #202	City:	State:
		Spokane	Washington
			Zip:
			99216
Changes Proposed:			
<input type="checkbox"/> Change purpose <input type="checkbox"/> Add purpose <input type="checkbox"/> Add irrigated acres			
<input type="checkbox"/> Change point of diversion/withdrawal <input type="checkbox"/> Add point of diversion/withdrawal <input type="checkbox"/> Change place of use			
<input checked="" type="checkbox"/> Other (Temporary, Trust, Interties, etc.) Add Irrigated Acres (ACQ)			
SEPA:			
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 application 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	30 cfs	Maximum gal/minute					
Maximum acre-ft/yr	18,000 ac-ft/yr	Describe Type(s) of use, and period(s) of use	Irrigation of 4500 acres (2/1 - 12/1)				
Source	Snake River (Lake Sacajawea)		Tributary of (if surface water)		Columbia River		
At a Point Located:							
Parcel No.	320908440002	1/4	NW	1/4	NE	Section	9
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED							
Type detailed legal description of the place of use:							
That part of Gov't Lot Nos. 9, 10, 11 and 12 of Sec. 3 and all that part of Sec. 9 lying south and east of the right-of-way of the OWRN Railroad; all of Sec. 10; the N1/2, the W1/2SW1/4, the NE1/2SW1/4 and the NW1/2SE1/4 of Sec. 14; all of Secs. 15, 21, and 22; the SW1/4 of Sec. 26; and all of Secs. 27 & 28: ALL WITHIN T. 9 N., R. 32 E.W.M., Walla Walla County, Washington							
Parcel no.	Multiple	1/4		1/4		Section	
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla

Proposed Use							
Maximum cub ft/second	30 cfs		Maximum gal/minute				
Maximum acre-ft/yr	11,673.5 ac-ft/yr		Describe Type(s) of use, and period(s) of use		Irrigation of 3930 acres (2/1 – 12/1)		
Source	Snake River (Lake Sacajawea)			Tributary of (if surface water)		Columbia River	
At a Point Located: Parcel No.	320908440002	1/4	NW	1/4	NE	Section	9
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED							
Type detailed legal description of the place of use: That part of Gov't Lot Nos. 9, 10, 11 and 12 of Sec. 3 and all that part of Sec. 9 lying south and east of the right-of-way of the OWRN Railroad; all of Sec. 10; the N½, the W½SW¼, the NE¼SW¼ and the NW¼SE¼ of Sec. 14; all of Secs. 15, 21, and 22; the SW¼ of Sec. 26; and all of Secs. 27 & 28: ALL WITHIN T. 9 N., R. 32 E.W.M., Walla Walla County, Washington.							
Parcel no.	Multiple	1/4		1/4		Section	Multiple
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla

Board's Decision on the Application							
Maximum cub ft/second	30 cfs		Maximum gal/minute				
Maximum acre-ft/yr	11,673.5 ac-ft/yr (ACQ limit of 10,391 ac-ft/yr)		Describe Type(s) of use, and period(s) of use		Irrigation of 3930 acres (2/1 – 12/1)		
Source	Snake River (Lake Sacajawea)			Tributary of (if surface water)		Columbia River	
At a Point Located: Parcel No.	320908440002	1/4	NW	1/4	NE	Section	9
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED							
Type detailed legal description of the place of use: That part of Gov't Lot Nos. 9, 10, 11 and 12 of Sec. 3 and all that part of Sec. 9 lying south and east of the right-of-way of the OWRN Railroad; all of Sec. 10; the N½, the W½SW¼, the NE¼SW¼ and the NW¼SE¼ of Sec. 14; all of Secs. 15, 21, and 22; the SW¼ of Sec. 26; and all of Secs. 27 & 28: ALL WITHIN T. 9 N., R. 32 E.W.M., Walla Walla County, Washington.							
Parcel no.	Multiple	1/4		1/4		Section	Multiple
Township N.	9 N.	Range	32 E.W.M.	WRIA	32	County	Walla Walla

Description of Proposed Works
Description of water diversion/withdrawal, conveyance, and distribution system: Screened river pumping station, mainlines, distributions lines, center pivot irrigation machines.

Development Schedule	
Begin project by this date (At least 75 days after Board's ROD issuance):	Started
Complete project by this date:	Completed
Complete change & put water to full use by this date:	Full Use

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 May, day 5th, year 2022. Name of applicant: Crown Farm Snake View, LLC of City: Spokane State: Washington filed an application for change (to do what e.g., POU, POD, POW, etc.) add irrigated acres under (Water right number, e.g., certificate, permit, claim, superseding document #, cert of change #): Surface Water Certificate No. S3-01062C. The application was accepted at an open public meeting on Month: May, day: 5th, year: 2022, and the board assigned application number (XXXX-YR-##): WALL-22-03.

Attributes of the water right as currently documented

Name on certificate, claim, permit:

- **Crown Farm Snake View, LLC**

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

- **Surface Water Certificate No. S3-01062C**

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:

- **June 20, 1966**

Water quantities:

- Qi (Instant qty): **30 cubic feet per second**
- Qa (Annual qty): **18,000 ac-ft/year**

Source (well, river, etc.):

- **Snake River (Lake Sacajawea)**

Point of diversion/withdrawal (Distance from ¼¼, Section, Township, Range EWM):

- **NW¼NE¼ of Sec. 9, T. 9 N., R. 32 E.W.M.**

Purpose of use:

- **Irrigation**

Number of Acres if Irrigation:

- **4500 acres**

Period of use:

- **February 1 to December 1**

Place of use:

That part of Gov't Lot Nos. 9, 10, 11 and 12 of Sec. 3 and all that part of Sec. 9 lying south and east of the right-of-way of the OWRN Railroad; all of Sec. 10; the N½, the W½SW¼, the NE¼SW¼ and the NW¼SE¼ of Sec. 14; all of Secs. 15, 21, and 22; the SW¼ of Sec. 26; and all of Secs. 27 & 28: ALL WITHIN T. 9 N., R. 32 E.W.M., Walla Walla County, Washington.

Existing provisions (family farm act, interruptable, etc.):

Issuance of this certificate shall not be construed as excusing the holder thereof from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by local agencies under the Shoreline Management Act of 1971.

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Native Americans under treaty or otherwise.

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:

Water has been used continuously within the place of use of Cert. No. S3-01062C since the right first issued in 1966. In recent years, a variety of crops such as potatoes, mint, field and sweet corn, wheat and hay have been grown, irrigated primary from center-pivot irrigation systems. Over the last 5 years, a total of 3930 acres have been irrigated annually, all under pivot.

Previous changes

Describe any previous change decisions associated with the water right:

There are no previous changes to SW Cert. No. S3-01062C of record with Ecology.

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):

A water right application is subject to a SEPA threshold determination (i.e., an evaluation whether there are likely to be significant adverse environmental impacts) if any one of the following conditions are met.

- It is a surface water right application for more than 1 cubic feet per second, unless that project is for agricultural irrigation, in which case the threshold is increased to 50 cubic feet per second, so long as that irrigation project will not receive public subsidies;
- It is a groundwater right application for more than 2,250 gallons per minute;
- It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above;
- It is a part of a larger proposal that is subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA);
- It is part of a series of exempt actions that, together, trigger the need to do a threshold determination, as defined under WAC 197-11-305.

Because this application does not meet any of these conditions it is categorically exempt from SEPA, and a threshold determination is not required.

Statutory Requirements/Authorities for Proposed Change

The following is a list of pertinent Washington State Statute and Case Law requirements that must be considered prior to authorizing the proposed change in place of use and point of withdrawal:

RCW 90.03.380(1) states that a water right which has been put to beneficial use may be changed. The point of diversion, place of use, and purpose of use may be changed if it would not result in detriment or injury to existing rights. This section also provides that a change in place of use, point of diversion, and/or purpose of use of a water right to enable irrigation of additional acreage or the addition of new uses may be permitted if such change results in no increase in the annual consumptive quantity of water used under the water right.

The Washington Supreme Court has held that when processing an application for change to a water right, a tentative determination of extent and validity of the claim or right is required. This is necessary to establish whether the claim or right is eligible for change. *R.D. Merrill v. PCHB and Okanogan Wilderness League v. Town of Twisp*.

RCW 90.14.180 states that any person hereafter entitled to divert or withdraw waters of the state through an appropriation authorized under RCW 90.03.330, 90.44.080, or 90.44.090 who abandons the same, or who voluntarily fails, without sufficient cause, to beneficially use all or any part of said right to withdraw for any period of five successive years shall relinquish such right or portion thereof.

Other

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

Ecology initiated a relinquishment action (DE-20122) in 2021 to reduce the number of acres authorized for irrigation under Cert. No. S3-01062C to 2653 acres, which they determined were the maximum number of acres irrigated over a more than 5 consecutive year period. This relinquishment order was appealed by the water right holder – Crown Farm Snake View, LLC (“Snake View”).

A tentative settlement was negotiated between Ecology and Snake View to resolve this issue. Snake View has irrigated relatively high water use crops on 3930 acres over the last 5 years. Snake View now intends to transition to lower water use crop rotations, using the saved water to spread over additional acres to equate to the 3930 acres currently irrigated. This application reflects the tentative settlement, with Ecology having agreed with the Annual Consumptive Quantity (ACQ) analysis included in this report.

The information or conclusions in this section were authored and/or developed by (Name of Person): Bill Neve, Water Right Solutions, LLC.

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

Public notice of the application was given in the (Name of Publication(s): **Walla Walla Union Bulletin** on Dates Published: **May 15th and 22nd, 2022**. Protest period ended on (end date of protest period): **June 21, 2022**

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): _____

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): Bill Neve, Water Right Solutions, LLC

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

The following information was obtained from a site inspection conducted by (person(s)): Nathan Rau, Board member, on (date of field exam): May 17, 2022, and through multiple visits by Bill Neve, report writer, technical reports, research of department records (list other references, if any) Other information reviewed and utilized included, but was not limited to, the following: the complete Ecology water right file for S3-01062; aerial photos, US Geological Survey quadrangle maps; technical reports, research of associated department records, and conversations with the applicant and/or other interested parties. 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.

The current irrigation system consists of a river pumping station, mainlines, distribution lines, and center pivot irrigation systems with drop tube rotator sprinklers. No change is proposed to the manner in which water is applied under Cert. No. S3-01062C.

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.

Ecology records show no other water rights appurtenant to lands within the authorized place of use of Cert. No. S3-01062C.

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.

The proposed transfer is a surface water right and is therefore not subject to a public interest test, which is exclusive to changes to ground water rights under RCW 90.44.100. A determination as to whether the proposed change is in the public interest is voluntarily provided herein as part of the overall evaluation of this application. Expressions of public interest for this proposed change potentially include comments or protests regarding approval of the proposed change and the Walla Walla County Municipal Code.

- a. **Comments/Protests:** No comments or protests were received regarding potential approval of the proposed changes, either in response to a legal notice published in the Walla Walla Union Bulletin, nor through and comments presented at Board meetings.
- b. **Walla Walla County Municipal Code (Codified as Ordinance 462, February 21, 2017):** The proposed place of use for the subject water right is in an area zoned Primary Agriculture 40 (40-acre minimum lot size). The proposed change is consistent with the current zoning.

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.

Background:

The current attributes of the subject water right are provided below:

Surface Water Certificate No. S3-01062C

Priority Date: June 20, 1966
Source: Snake River (Lake Sacajawea)
Quantities: 30 cubic feet per second, 18000 acre-feet per year
Purpose of Use: Irrigation of 4500 acres
Season of Use: February 1 to December 1, each year
Diversion Location: NW¼NE¼ of Sec. 9, T. 9 N., R. 32 E.W.M.

This certificate is currently the subject of a relinquishment action on the part of the Department of Ecology, which if upheld would reduce the number of acres authorized for irrigation under this right from 4500 to 2653 acres (the relinquishment action is currently under appeal; this application is part of a settlement agreement of that action). There are currently 3930 acres under irrigation at the Snake View farm. An aerial overview which depicts the place of use and point of diversion for Cert. No. S3-01062C is provided as Exhibit A.

Beneficial Use of Water:

For purposes of estimating total water appropriated and used for irrigation purposes under Cert. No. S3-01062C, a determination of the total number of acres irrigated, the crops grown on those acres, and the allocation of water necessary for those crops grown must be made.

Acres

As noted above, Ecology has made a determination that approximately 2653 acres were irrigated for an extended period of time up to 2015, after which the number of acres irrigated under pivot were expanded to approximately 3930 acres. Snake View, LLC has provided detailed as-built specifications for each pivot assessed by Ecology in their review (Exhibit B). These specifications show a total area under pivot of 2683.3 acres, 30.3 acres more than the Ecology estimate. The as-built calculations, as opposed to aerial photo interpretation, should provide a more accurate estimate of acres under pivot. Ecology is in agreement with this assessment.

For purposes of this exercise, 2683 acres will be used as the number of acres historically irrigated and therefore available for a tentative determination of beneficial use. The Snake View, LLC pivot locations and numbers are provided in Exhibit C.

Crop Type

Snake View has provided detailed crop/acreage data for each pivot utilized for the irrigation of 2683 acres over the last 5 years from 2017 through 2021. This information is attached as Exhibit D.

Crop Evapotranspiration Data

Annual crop water use was calculated by pivot, using the following methodology:

- Determine crop type/acres under pivot
- Multiply acres by evapotranspiration (ET) estimate for the given crop
- Divide by irrigation application efficiency

The crop type and pivot acres have been accounted for, as provided above. There are multiple data sources for estimating crop ET. The three methods deemed most appropriate for this project were utilized in this exercise: the State of Washington Irrigation Guide (WIG); Washington State University AgWeatherNet (AWN) data, and OpenET, a collaborative effort between federal, state and private entities to provide satellite-based estimates of ET data. An irrigation application efficiency of 80%, with 5% return flows, was derived from Ecology Guidance Document 20-11-076, Table 1.

Washington Irrigation Guide (WIG)

The WIG has been used by Ecology as the standard method for estimating crop ET for many years. The WIG is based on average climate conditions from 1951 to 1980, utilizing data from 90 stations situated statewide. This method, as a long-term average of precipitation and temperature conditions, does not provide for peak day estimates during drought situations. Under these conditions crops may require 10 to 15% more water, depending on the severity and duration of the drought.

The closest WIG data station is Kennewick, located approximately 14.5 miles west of the project site.

AgWeatherNet (AWN)

AWN provides real-time ET data from a network of 232 stations located across the state. There are three tiers of stations, with Tier 1 being the most robust. All station tiers are solar powered and report on 15-minute intervals. The ET data from the Welland Tier 1 station, which is located approximately 2.5 miles southeast of the project site, was utilized for crop use calculations. As the ET data from this station is provided in a daily format, crop plant/harvest date information was provided by Snake View, LLC to provide for a more accurate representation of actual crop water use. This crop season information is provided in Exhibit E.

OpenET

OpenET is a new data source created through a collaboration of various state, federal, private and educational entities. Its purpose is to provide satellite-based ET estimates at the field scale. For purposes of this analysis, the same individual pivots utilized in the AWN evaluation were used for OpenET. Each pivot selected using the OpenET tool provide estimates of irrigated area, crop type, and annual ET for crop year.

Comparative Results of ET Calculations

The comparative results of the calculations utilizing the three datasets outlined above are presented in Table 1. The 2021 data for OpenET are currently unavailable, so the results for that year have not been calculated. The complete calculations are provided in the attached spreadsheet titled “*Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021).*”

Table 1: Comparison of Crop Water Use Calculation Results – S3-01062C (2683 Acres)

Method/Year	2017	2018	2019	2020	2021
WIG	9523	9620	9268	9837	9786
ANW	10142	10236	10034	10344	11605
OpenET	9282	9769	8873	9876	N/A

Note: The quantities above incorporate soil profile additions at a rate of 2.5 inches/acre.

The results using the ANW data are believed to be the most robust for a number of reasons, as outlined below.

WIG vs AWN:

The data from the WIG calculations are lower than those produced by ANW data, which is to be expected given the methodology of the datasets and the years evaluated. There are several issues which suggest that the WIG data is not as relevant as AWN for this exercise:

- The data station is 10+ miles farther away, which reduces the likelihood of an accurate representation of actual crop ET at the project site
- The crop data for 2020 and 2021 reflect relatively high water use years, in particular the severe drought of 2021. The WIG data, as a 30-year average, inherently does not account for peak water use in drought years. Use of this dataset can leave the water user with an allocation inadequate to cover water requirements in drought years.
- The 30-year dataset used in the WIG from 1951 to 1980 is dated, and does not reflect climate trends towards warmer, drier growing seasons. For purposes of this particular situation - looking at the last 5 years of use, which includes two drought seasons – the WIG does not represent the most appropriate data source.

OpenET vs AWN:

Both of these sources provide real-time ET data, OpenET through an ensemble of models utilizing a variety of inputs, and AWN through a model using specific weather data from a nearby collection station. OpenET is a new tool, which holds promise but also needs time to address known issues. The OpenET models used a single ET flux tower for the entire state of Washington for validation purposes and has a mean absolute error of 13.2% on a season long basis. The AWN data uses data collected from a Tier 1 station located in close proximity to the project site, utilizes specific crop season timeframes and has a longer period of record. Several errors in the OpenET datasets became apparent in the estimating of total water use and are highlighted in red on the attached “Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021)” spreadsheets. Among these issues:

- Several crop types for pivots were mis-identified in the OpenET data, including 134.3 acres which were identified as fallow/shrub when a mint crop was actually grown (Pivot 92, 2017) and spring wheat and corn crops identified when timothy hay was actually grown (Pivots 84 & 85, 2020). While this may not have impacted the ET calculations significantly, it does bring into question the integrity of the data.
- There were small discrepancies between most all of the pivot acres identified by OpenET data versus AWN (AWN acres, which are calculated based on pivot construction, were utilized in the OpenET calculations). However, in each crop year OpenET data showed certain pivots with large discrepancies in estimated irrigated acres as compared to actual. This is due to the inclusion of non-cropped areas between pivots being shown as irrigated lands in OpenET. This is especially concerning as the ET valuations (inches/acre) provided for those fields incorporate what is essentially background ET on uncropped, non-irrigated land which will necessarily provide a lower ET valuation than when looking at only the actual irrigated pivot crop.

Dr. Troy Peters, WSU Extension Irrigation Specialist at the Irrigated Agriculture Research and Extension Center in Prosser, WA, was contacted and asked about the comparative accuracy of the two methods when determining ET in a situation such as the evaluation being conducted herein. Dr. Peters indicated that while there are uncertainties with both models, utilizing AWN with a station in close proximity will usually provide a more accurate result than OpenET.

Data Source Conclusions

While each of these methods have value for different applications, for purposes of determined crop water use over the most recent 5-year period under Cert. S3-01062C, AWN currently provides the most relevant and accurate dataset for this particular location:

- The AWN's real-time (15-minute interval) dataset is more accurate than the WIG 30-year average when calculating water use for specific years.
- The WIG data is 40+ years old, and does not capture recent trends towards warmer, drier years in the region.
- The AWG reference data station (Welland) is located 2.5 miles from the project area; the closest WIG station (Kennewick) is 15 miles distant and presumably does not represent water requirements at this location as accurately.
- In several instances OpenET includes fallowed lands in ET calculations for particular pivots
- The OpenET dataset is incomplete for this project area.
- OpenET misidentifies crop type on multiple pivots within the project

Soil Profile Additions

Besides water application for plant growth, additional are commonly used for such purposes as pre-fumigation and post fumigation, fumigation applications, seedbed preparation/germination, and pre-harvest and post-harvest erosion control. Mark Nielson, District Manager for the Benton/Franklin Conservation Districts, was consulted on typical application rates for different crops in this area. The results of that consultation are provided in Exhibit F.

The application rates can range from a fractional inch to 2-3 inches, depending on purpose, site conditions, and crop type. The total application can range from 2 to over 6 inches per acre. Other entities in the area have reported use averaging 4 inches per acre for these purposes. The use of water for these types of soil profile additions is typically applied to the upper couple of inches of soil.

Calculations using a range of "low", "average" and "high" water applications as outlined in Exhibit F were prepared for the subject acres for the 2020 and 2021 crop years. The values for each category are provided in Table 2, below. The results of the calculations are provided in provided in Tables 3 and 4, below. Other crop acres could potentially be included depending on their growth stage and site conditions; this exercise focuses on those crops which consistently require soil profile adds.

Table 2: Soil Profile Addition Ranges (from Exhibit F, attached)

<i>Crop</i>	<i>Range (ac-in)</i>	<i>"Low"</i>	<i>"Ave"</i>	<i>"High" (ac-ft)</i>
Potatoes	4.8 – 6.75 in ¹	4.8 in (0.4 af) ¹	5.77 in (0.48 af) ¹	6.75 in (0.56 af) ¹
Corn	2-3 in ¹	2 in (0.16 af) ¹	2.5 in (0.21 af) ¹	3 in (0.25 af) ¹
New Seeding	2-3 in ¹	2 in (0.16 af) ¹	2.5 in (0.21 af) ¹	3 in (0.25 af) ¹

¹ Units: in = acre-inches; af = acre-feet per acre

Table 3: Soil Profile Additions - 2020

<i>Crop</i>	<i>Acres</i>	<i>"Low" (ac-ft)</i>	<i>"Ave" (ac-ft)</i>	<i>"High" (ac-ft)</i>
Potatoes	884	354	426	497
Corn	278	46	58	70
New Seeding	613.4	51	128	153
	1775.4	451 ac-ft	612 ac-ft	720 ac-ft
<i>Totals (@ 80% app. eff.)</i>		564 ac-ft	764 ac-ft	900 ac-ft

Table 4: Soil Profile Additions - 2021

<i>Crop</i>	<i>Acres</i>	<i>"Low" (ac-ft)</i>	<i>"Ave" (ac-ft)</i>	<i>"High" (ac-ft)</i>
Potatoes	754	302	363	424
Corn	483	81	101	121
New Seeding	613.4	102	128	153
	1237 acres	484 ac-ft	592 ac-ft	698 ac-ft
<i>Totals (@ 80% app. eff.)</i>		605 ac-ft	739 ac-ft	873 ac-ft

Note: New seeding includes crops such as alfalfa, timothy hay and mint; excludes corn and potatoes

After evaluation of the data in the above tables, and in consideration of crop rotation and varying application requirements from years to year, a conservative estimate of 2.5 inches per acre was determined to be reasonable and was added to the beneficial water use quantities. The total soil profile add for these purposes at a 2.5-inch average water requirement and 80% application efficiency is 698.7 acre-feet over 2683 acres, which falls between the “low” and “average” calculated application volumes summarized in Tables 2 and 3, above.

Summary

A total of 2683 acres have been irrigated historically and form the basis for the evaluation of beneficial use of water. The dataset from AWN has been determined to be the most relevant and accurate for use in estimating crop irrigation use at this site, and a soil profile add of 2.5 inches per acre is a reasonable estimate at this location.

The results of this analysis show that 2020 and 2021 are the highest water use years. A summary of the determined beneficial use of water over 2683 acres for these two years, together with a comparison with the quantities currently allocated under Cert. No. S3-01062C, are provided in Table 5.

Table 5: Determined Beneficial Use of Water – 2021/2022

	<i>Acres</i>	<i>Acre-Foot/Year</i>
<i>Cert. No. S3-01062C</i>	4500	18,000
<i>2020 Beneficial Use</i>	2683	11,043
<i>2021 Beneficial Use</i>	2683	12,304

Annual Consumptive Quantity (ACQ) Analysis

Washington water law provides for changing a water right to enable irrigation of additional acres through RCW 90.03.380(1):

“A change in the place of use, point of diversion, and/or purpose of use of a water right to enable irrigation of additional acreage or the addition of new uses may be permitted if such change results in no increase in the annual consumptive quantity of water used under the water right. For purposes of this section, “annual consumptive quantity” means the estimated or actual annual amount of water diverted pursuant to the water right, reduced by the estimated annual amount of return flows, averaged over the two years of greatest use within the most recent five-year period of continuous beneficial use of the water right.”

The ACQ was calculated consistent with the statutory formula described under RCW 90.03.380(1). The results of these calculations are provided in the attached “*Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021)*” spreadsheet. A summary of the calculations is provided below.

2020 - Consumptive Use less Return Flows (ac-ft): $10344 - 552 = 9792$ acre-feet

2021 - Consumptive Use less Return Flows (ac-ft): $11605 - 615 = 10990$ acre-feet

- **ACQ:** $9792 + 10990 = 20782$ $20782/2 = 10391$ acre-feet

Return Flows

Ecology has discretion regarding the disposition of estimated return flows. Ecology Program Procedure PRO-1210, “*Calculating and Applying the Annual Consumptive Quantity (ACQ)*”, April 2018 states:

“...the quantification of the consumptive portion of the right, does not alter or diminish the total water right, but rather restricts the consumptive nature of the right after the change. 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 and can be reasonably measured.” Page 3, Paragraph 7

The water for application to additional acres would come from a transition to lower water use crops; there is no intent to change the existing irrigation infrastructure at this time. This being the case, the 5% return flow

estimate would not change, and could be added back into the total quantity available without impacting the consumptive use of water (the ACQ limit would not change).

Soil moisture additions for such functions as seed germination and fumigation purposes have been, and will continue to be, a beneficial use of water under this right. These quantities can also be added to the ACQ as an overall water right allocation.

The total maximum diversion quantity would be limited as follows: $11043 (2020) + 12304 (2021) = 23347/2 = 11673.50$ acre-feet/year.

Total Water Available:

- **Water Right Maximum Limit:** 11673.50 acre-feet/year
- **ACQ Annual Limit:** 10391 acre-feet/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.

No geologic, hydrogeologic or other scientific investigations were conducted nor deemed necessary to make a decision on this application.

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): Bill Neve, Water Right Solutions, LLC.

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.

A tentative determination as to the extent and validity of Surface Water Cert. No. S3-01062C was completed, which resulted in the following quantities determined to be valid and available for consideration of the proposed change in place of use: 30 cubic feet per second, 12,304 acre-feet per year, for the seasonal (2/1 – 11/1) irrigation of 2683 acres.

For purposes of evaluating the proposed expansion of the authorized irrigated acres under this right, an ACQ calculation was completed. The analysis, the full calculations for which are attached to this report, concluded the quantities available for the proposed change are 30 cubic feet per second, 11,673.5 acre-feet per year, for the seasonal irrigation of 3930 acres, with an ACQ limit of 10,391 acre-feet per year.

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.

RCW 90.14.180 provides that:

“Any person hereafter entitled to divert or withdraw waters of the state through an appropriation authorized under RCW 90.03.330, 90.44.080, or 90.44.090 who abandons the same, or who voluntarily fails, without sufficient cause, to beneficially use all or any part of said right to withdraw for any period of five successive years shall relinquish such right or portion thereof, and such right or portion thereof shall revert to the state, and the waters affected by said right shall become available for appropriation in accordance with RCW 90.03.250. All certificates hereafter issued by the department of ecology pursuant to RCW 90.03.330 shall expressly incorporate this section by reference.”

SW Cert. No. S3-01062C originally issued for 30 cubic feet per second, 18,000 acre-feet per year, for the seasonal irrigation of 4500 acres. A tentative determination of the existing right conduction through this application determined the extent of this right to be 30 cubic feet per second, 12,304 acre-feet per year, for the irrigation of 2683 acres (2020 irrigation season). Finally, an Annual Consumptive Quantity calculation was conducted which resulted in the following allocations determined to be available for the use proposed under this application: 30 cubic feet per second, 11,673.50 acre-feet per year, for the irrigation of 3930 acres, with an ACQ not to exceed 10,391 acre-feet per year.

Upon approval of the request to expand irrigated acres as proposed herein, the difference between the certificated quantities and those approved through this change would be subject to relinquishment. The difference in those quantities are provided in Table 6, below.

Table 6: Determined Beneficial Use of Water – 2021/2022

	<i>Acre</i> s	<i>Cubic Feet per Second (Qi)</i>	<i>Acre-Feet/Year (Qa)</i>
<i>Cert. No. S3-01062C</i>	4500	30	18,000
<i>Recommended Quantities</i>	3930	30	11673.5
<i>Subject to Relinquishment</i>	570	0	6,326.5

Hydraulic analysis

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

No hydraulic analysis was necessary for evaluation of this application.

Consideration of comments and protests

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

Public notice of the application was provided in the Walla Walla Union Bulletin, published in Walla Walla County, on May 15th and 22nd, 2022. There were no protests received during the 30-day protest period following the last date of publication. Likewise, no comments or objections regarding this application were received at open public meetings of the Board.

Impairment

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

There has been no evidence provided during the course of this investigation and evaluation of the application that would suggest that the propose change would, if approved, result in the impairment of any existing water rights – ground or surface. The proposed change would not increase the quantities of water historically put to beneficial use under this right, nor would the diversion point from the Snake River change. There will be no impairment of or to existing water rights created through approval of the proposed change in place of use.

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.

While a public interest determination is not required of a change to surface water rights, an analysis was performed which concluded that the proposed change in place of is consistent with Walla Walla Municipal Code. No protests or objections were received by letter or expressed at the Board's monthly meetings when the subject application was being evaluated.

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.

N/A

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.

Applications for change to surface water right permits, certificates and claims are governed by RCW 90.03.380 which state in part that: the holder of a valid surface water right may, without losing priority of the right, change the point of diversion and transfer or change the place of use and purpose of use of a water right, provided that:

- **The change must not cause detriment or injury to existing rights;**
- **A valid right/claim exists that is eligible to be changed;**
- **The change shall not allow for the enhancement of the right perfected under the original certificate;**

It is the conclusion of the Walla Walla County Water Conservancy Board that in accordance with RCW 90.03.380: (1) the proposed change in place of use will not impair existing water rights; (2) a valid right exists and is eligible to be changed to the extent the right has been put to historic beneficial use, as summarized in the tentative determination above, and (3) that the proposed change will not expand or enhance the right which water perfected under the original certificate in a way not authorized under existing statute.

Based on the above investigation and conclusions, the Board recommends that the requested change to expand the number of acres authorized for irrigation under Surface Water Certificate No. S3-01062C be approved to the extent of:

30 cubic feet per second, 11,673.5 acre-feet per year, from February 1 to December 1, each year, for the irrigation of 3930 acres (ACQ limit of 10,391 ac-ft/yr) within the place of use as described on Page 3 of this report, subject to the provisions enumerated below.

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): Bill Neve, Water Right Solutions and members of the Walla Walla County Water Conservancy Board.

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.

Measurements, Monitoring, Metering and Reporting

1. An approved measuring device shall be installed and maintained in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. This rule describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".
<http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html>
2. Water use data shall be recorded weekly. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to Ecology by January 31st of each calendar year.
3. Reported water use data shall be submitted via the Internet or by using the enclosed forms. To set up an Internet reporting account, access <https://fortress.wa.gov/ecy/wrx/wrx/Meteringx/>. If you have questions or need additional forms, contact the Eastern Regional Office.

Department of Fish and Wildlife

4. No dam or weir shall be constructed in connection with this diversion.
5. The intake(s) shall be screened in accordance with Department of Fish and Wildlife screening criteria.
<http://www.wdfw.wa.gov/reg/regions.html>

Schedule and Inspections

6. 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.

Proof of Appropriation

7. A certificate of water right will not be issued until a final examination is made.
8. Consistent with the development schedule provided in the report (unless extended by Ecology) the water right holder must file a Notice of Proof of Appropriation of Water (PA) 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 authorization, 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 Right Examiner (CWRE) to conduct this proof examination. A list of CWREs is provided to the water right holder upon filing the PA with Ecology. The final water right certificate may then issue based upon the findings of the CWRE. Statutory county and state filing fees may apply prior to certificate issuance.

General Conditions

9. You are advised that the issuance of this change does not convey a right of access to, or other right to use land, which you do not legally possess. Obtainment of such a right is a private matter between the applicant and the owner of the land.
10. Use of water under this authorization shall be contingent upon the water right holder's maintenance of efficient water delivery systems and use of up-to-date water conservation practices consistent with established regulation requirements and facility capabilities.

11. Nothing in this authorization shall be construed as satisfying other applicable federal, state, or local statutes, ordinances or regulations.
12. The amount of water granted is a maximum limit that shall not be exceeded, and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required for the actual crop(s) grown on the number of acres and the place of use specified.
13. This authorization to make use of public waters of the State is subject to existing rights, including any existing rights held by the United States for the benefit of Native Americans under treaty or otherwise.

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 irrigation diversion, conveyance and application infrastructure are in place and in full use. One year to allow for collection and submission of meter data to meet the proviso should be sufficient.

Beginning of Construction: Completed

Completion of Construction: Completed

Water Put to Full Use: December 31, 2023

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): Bill Neve, Water Right Solutions, LLC and members of the Walla Walla County Water Conservancy Board.

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 Walla Walla, Washington

This 07 day of September 2022
Date (Day) (Month) (Year)

Name of Board Representative: Robert M. Berger

Name of Water Conservancy Board: Walla Walla County Water Conservancy Board

Signature: Robert M Berger

Walla Walla County Water Conservancy Board
P.O. Box 1506, Walla Walla, WA 99362

September 7, 2022

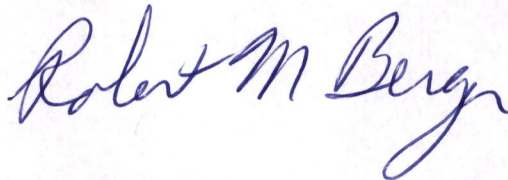
Department of Ecology
Eastern Regional Office
N. 4601 Monroe
Spokane, WA 99205-1295

RECEIVED
SEP 12 2022
Department of Ecology
Eastern Washington Office

Re: Application for Change WALL-22-03

Find enclosed hard copies of the signed ROD and ROE for the above application WALL 22-03, SW Cert. No. S3-01062C. The application was for adding Irrigation acres (ACQ).

Sincerely,



Robert Berger
Chair
Walla Walla County Water Conservancy Board

RECEIVED

SEP 12 2022

Department of Ecology
Eastern Washington Office

SUPPLEMENTAL INFORMATION

Surface Water Cert. No. S3-01062C

- SW Cert. No. S3-01062C/Affidavit of Publication/Maps
- Annual Consumptive Quantity (ACQ) Calculations
- Exhibit A: POU/POD
- Exhibit B: Pivot Specifications/Irrigated Area
- Exhibit C: Map – Pivot Locations and Numbers
- Exhibit D: Irrigation by Crop Type/Acres (2017-2021)
- Exhibit E: Cropping Plant/Harvest Dates
- Exhibit F: Soil Profile Additions

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

AMENDED THIS CERTIFICATE SUPERSEDES CERTIFICATE NUMBER S3-01062C ISSUED ON FEBRUARY 8, 1974.
CERTIFICATE OF WATER RIGHT

- ☒ **Surface Water** (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)
- ☐ **Ground Water** (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

CERTIFICATE NUMBER	PERMIT NUMBER	APPLICATION NUMBER	PRIORITY DATE
S3-01062C	14572	19723	June 20, 1966

NAME

G. C. and MIRRA WALKLEY, et al

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
Rt. 1, Box 25	Pasco	Washington	99301

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE

Snake River (Lake Sacajawea)

TRIBUTARY OF (IF SURFACE WATERS)

Columbia River

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
30		10,000

QUANTITY, TYPE OF USE, PERIOD OF USE

30 cubic feet per second, 10,000 acre-feet from February 1 to December 1, each year, for
irrigation of 4500 acres.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION/WITHDRAWAL

2100 feet west and 400 feet south from northeast corner of Sec. 9

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
Swingline	9	9	32 E.		Walla Walla

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY WATER TO BE USED ON

That part of Government Lots 9, 10, 11, and 12 of Sec. 3 lying south and east of the right-of-way of the OWRN Railroad; all that part of Sec. 9 lying south and east of the right-of-way of the OWRN Railroad; all of Sec. 10; the NW $\frac{1}{4}$, the W $\frac{1}{2}$ SW $\frac{1}{4}$, the NE $\frac{1}{4}$ SW $\frac{1}{4}$ and the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Sec. 14; all of Secs. 15, 21, and 22, and SW $\frac{1}{4}$ of Sec. 26 and all of Secs. 27 and 28; all in T. 9 N., R. 32 E.W.M.

PROVISIONS

Issuance of this certificate shall not be construed as excusing the holder thereof from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by local agencies under the Shoreline Management Act of 1971.

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Indians under treaty or otherwise.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.180.

Given under my hand and the seal of this office at Olympia, Washington, this 30th day of April, 1974.

JOHN A. BIGGS, Director
Department of Ecology

ENGINEERING DATA

OK.....

by R. Jerry Bollen, Assistant Director

FOR COUNTY USE ONLY



WALLA WALLA
UNION-BULLETIN
We Bring the Valley to You

AFFIDAVIT OF PUBLICATION

Robert Berger
Walla Walla County Water Conservancy Board
PO BOX 1506
Walla Walla WA 99362

STATE OF WASHINGTON, COUNTIES OF WALLA WALLA

The undersigned, on oath states that he/she is an authorized representative of Walla Walla Union-Bulletin, Inc., publisher of the Walla Walla Union-Bulletin, of general circulation published daily in Walla Walla County, State of Washington. The Walla Walla Union-Bulletin has been approved as a legal newspaper by orders of the Superior Court of Walla Walla County.

The notice, in the exact form annexed, was published in the regular and entire issue of said paper or papers and distributed to its subscribers during all of the said period.

05/15/2022, 05/22/2022

Agent JACKIE CHAPMAN Signature Jackie Chapman

Subscribed and sworn to before me on May 25, 2022

Lisa M. Driggs
(Notary Signature) Notary Public in and for the State of Washington, residing at Yakima

Publication Cost: \$126.90
Order No: 29464
Customer No: 25808
PO #: S3-01062C



Publication Cost: \$126.90
Order No: 29464
Customer No: 25808
PO #: S3-01062C


**BEFORE THE WALLA WALLA COUNTY
WATER CONSERVANCY BOARD
WALLA WALLA, WASHINGTON**

**Notice of Application to Add Irrigated Acres under
Surface Water
Certificate No. S3-01062C**

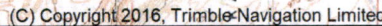
TAKE NOTICE: That on May 5, 2022, Crown Farm Snakeview, LLC of Spokane, Washington filed application number WALL-22-03 with the Walla Walla County Water Conservancy Board to add (restate) the irrigated acres authorized under Surface Water Certificate No. S3-01062C. That Cert. No. S3-01062C, under priority date of June 20, 1966, authorizes diversion of 30 cubic feet per second, 18,000 acre-feet per year, for the seasonal irrigation of 4500 acres. That the authorized point of diversion is within the NW¼NE¼ of Sec. 9, T. 9 N., R. 32 E.W.M., and the place of use is within Secs. 3, 9, 10, 14, 15, 21, 22, 26, 27 and 28, ALL WITHIN T. 9 N., R. 32 E.W.M.

The applicant proposes to add (restate) the number of acres authorized for irrigation under Cert. No. S3-01062C to a maximum of 3930 acres.

Any protests or objections to the approval of this application may be filed with the Department of Ecology and must include a detailed statement of the basis for objections; protests must be accompanied by a fifty dollar (\$50) recording fee and filed with the Cashiering Section, State of Washington, Department of Ecology, PO Box 47611, Olympia, WA 98504-7611 within thirty (30) days from May 22, 2022. Any interested party may submit comments, objections, and other information to the Water Board regarding this application. The comments and information may be submitted in writing or verbally at any public meeting of the board held to discuss or decide on the application. This application will be on the board agenda during its regular meetings to be held on the first Wednesday of each month until completion of application. Additionally, the Water Board may receive written comments or information provided within thirty (30) days from the last date of publication of this notice, said written comments or information to be provided to: Walla Walla County Water Conservancy Board, attention Robert Berger, P.O. Box 1506, Walla Walla, WA 99362. Note: This notice does not constitute notice of a meeting for the purposes of the Open Public Meetings Act, RCW 42.30. (Pub. May 15 & 22, 2022)

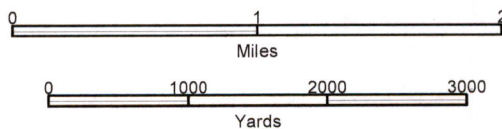


118° 44' 28.0760" W
+ 046° 18' 36.7885" N



Printed: Mon Feb 28, 2022

(WALLA WALLA)



CONTOUR INTERVAL 10 FT
[BASE MAP VERTICAL DATUM]

WALLA WALLA, WA
JAN 1, 1991

(Satellite Image
(Hybrid Street))

Cert. No. S3-01062C: Place of Use/Point of Diversion

ATELLITE IMAGE (HYBRID STREET)

QUADRANGLE

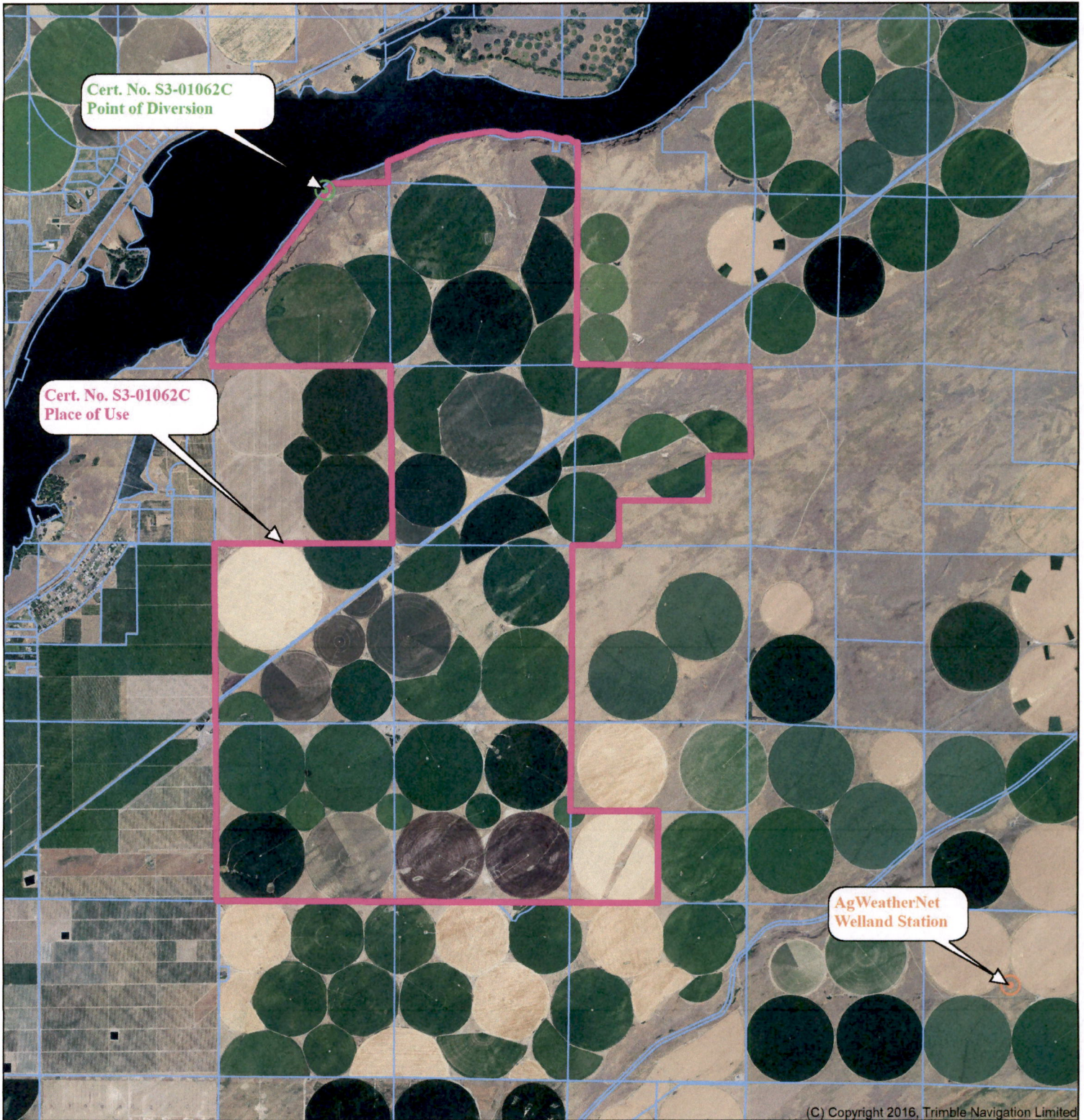
WASHINGTON

AERIAL PHOTO SERIES

(Satellite Image
(Hybrid Street))

(Satellite Image
(Hybrid Street))

118° 43' 25.1094" W
+ 046° 17' 56.5660" N



(C) Copyright 2016, Trimble Navigation Limited

046° 12' 27.6031" N +
118° 51' 02.2266" W



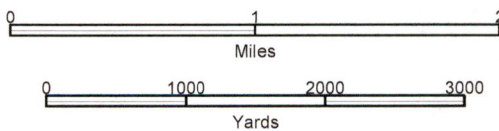
Water Right
Solutions

Declination

MN
MN 14° 30' E

(Satellite Image (Hybrid Street))

SCALE 1:48000



CONTOUR INTERVAL UNKNOWN FT
[BASE MAP VERTICAL DATUM]

Printed: Mon Nov 29, 2021

+ 046° 12' 27.6031" N
118° 43' 25.1094" W

(Satellite Image
(Hybrid Street))

SATELLITE IMAGE
(HYBRID STREET), WA
JUL 1, 2019

ANNUAL CONSUMPTIVE QUANTITY (ACQ) CALCULATIONS

Surface Water Cert. No. S3-01062C



WATER RIGHT
SOLUTIONS, LLC

TECHNICAL MEMORANDUM

To: Alex Hoffman, Vice President, Petrus Partners, Ltd.
Mark Peterson, J.D.

From: Bill Neve, Water Right Solutions, LLC

Date: February 2, 2022

Subject: Historic Beneficial Use/Annual Consumptive Quantity (ACQ) Analysis – SW Cert. No. S3-01062C (Snake View, LLC)

Purpose:

The purpose of this paper is to evaluate historic cropping practices and estimate total irrigation water use under Surface Water Certificate No. S3-01062C on the Snake View, LLC farm north of Burbank, Washington. The results of this analysis will be used to calculate the Annual Consumptive Quantity (ACQ) of water use over the last 5 years of use for purposes evaluating the feasibility of expansion of irrigated acres under Cert. No. S3-01062.

Background:

The current attributes of the subject water right are provided below:

Surface Water Certificate No. S3-01062C

Priority Date:	June 20, 1966
Source:	Snake River (Lake Sacajawea)
Quantities:	30 cubic feet per second, 18000 acre-feet per year
Purpose of Use:	Irrigation of 4500 acres
Season of Use:	February 1 to December 1, each year
Diversion Location:	NW¼NE¼ of Sec. 9, T. 9 N., R. 32 E.W.M.

This certificate is currently the subject of a relinquishment action on the part of the Department of Ecology, which if upheld would reduce the number of acres authorized for irrigation under this right from 4500 to 2653 acres (the relinquishment action is currently under appeal). There are currently 3930 acres under irrigation at the Snake View farm. An aerial overview which depicts the place of use and point of diversion for Cert. No. S3-01062C is provided as Exhibit A.

Beneficial Use of Water:

For purposes of estimating total water appropriated and used for irrigation purposes under Cert. No. S3-01062C, a determination of the total number of acres irrigated, the crops grown on those acres, and the allocation of water necessary for those crops grown must be made.

Acres

As noted above, Ecology has made a determination that approximately 2653 acres were irrigated for an extended period of time up to 2015, after which the number of acres irrigated under pivot were expanded to approximately 3930 acres. Snake View, LLC has provided detailed as-built specifications for each pivot assessed by Ecology in their review (Exhibit B). These specifications show a total area under pivot of 2683.3 acres, 30.3 acres more than the Ecology estimate. The as-built calculations, as opposed to aerial photo interpretation, should provide a more accurate estimate of acres under pivot.

For purposes of this exercise, 2683 acres will be used as the number of acres historically irrigated and therefore available for a tentative determination of beneficial use. The Snake View, LLC pivot locations and numbers are provided in Exhibit C.

Crop Type

Snake View has provided detailed crop/acreage data for each pivot utilized for the irrigation of 2683 acres over the last 5 years from 2017 through 2021. This information is attached as Exhibit D.

Crop Evapotranspiration Data

Annual crop water use was calculated by pivot, using the following methodology:

- Determine crop type/acres under pivot
- Multiply acres by evapotranspiration (ET) estimate for the given crop
- Divide by irrigation application efficiency

The crop type and pivot acres have been accounted for, as provided above. There are multiple data sources for estimating crop ET. The three methods deemed most appropriate for this project were utilized in this exercise: the State of Washington Irrigation Guide (WIG); Washington State University AgWeatherNet (AWN) data, and OpenET, a collaborative effort between federal, state and private entities to provide satellite based estimates of ET data. An irrigation application efficiency of 80%, with 5% return flows, was derived from Ecology Guidance Document 20-11-076, Table 1.

Washington Irrigation Guide (WIG)

The WIG has been used by Ecology as the standard method for estimating crop ET for many years. The WIG is based on average climate conditions from 1951 to 1980, utilizing data from 90 stations situated statewide. This method, as a long-term average of precipitation and temperature conditions, does not provide for peak day estimates during drought situations. Under these conditions crops may require 10 to 15% more water, depending on the severity and duration of the drought.

The closest WIG data station is Kennewick, located approximately 14.5 miles west of the project site.

AgWeatherNet (AWN)

AWN provides real-time ET data from a network of 232 stations located across the state. There are three tiers of stations, with Tier 1 being the most robust. All station tiers are solar powered and report on 15 minute intervals. The ET data from the Welland Tier 1 station, which is located approximately 2.5 miles southeast of the project site, was utilized for crop use calculations. As the ET data from this station is provided in a daily format, crop plant/harvest date information was provided by Snake View, LLC to provide for a more accurate representation of actual crop water use. This crop season information is provided in Exhibit E.

OpenET

OpenET is a new data source created through a collaboration of various state, federal, private and educational entities. Its purpose is to provide satellite-based ET estimates at the field scale. For purposes of this analysis, the same individual pivots utilized in the AWN evaluation were used for OpenET. Each pivot selected using the OpenET tool provide estimates of irrigated area, crop type, and annual ET for crop year.

Comparative Results of ET Calculations

The comparative results of the calculations utilizing the three datasets outlined above are presented in Table 1. The 2021 data for OpenET are currently unavailable, so the results for that year have not been calculated. The complete calculations are provided in the attached spreadsheet titled “*Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021).*”

Table 1: Comparison of Crop Water Use Calculation Results – S3-01062C (2683 Acres)

Method/Year	2017	2018	2019	2020	2021
WIG	9523	9620	9268	9837	9786
ANW	10142	10236	10034	10344	11605
OpenET	9282	9769	8873	9876	N/A

Note: The quantities above incorporate soil profile additions at a rate of 2.5 inches/acre.

The results using the ANW data are believed to be the most robust for a number of reasons, as outlined below.

WIG vs ANW:

The data from the WIG calculations are lower than those produced by ANW data, which is to be expected given the methodology of the datasets and the years evaluated. There are several issues which suggest that the WIG data is not as relevant as ANW for this exercise:

- The data station is 10+ miles farther away, which reduces the likelihood of an accurate representation of actual crop ET at the project site
- The crop data for 2020 and 2021 reflect relatively high water use years, in particular the severe drought of 2021. The WIG data, as a 30-year average, inherently does not account for peak water use in drought years. Use of this dataset can leave the water user with an allocation inadequate to cover water requirements in drought years.

- The 30-year dataset used in the WIG from 1951 to 1980 is dated, and does not reflect climate trends towards warmer, drier growing seasons. For purposes of this particular situation - looking at the last 5 years of use, which includes two drought seasons – the WIG does not represent the most appropriate data source.

OpenET vs AWN:

Both of these sources provide real-time ET data, OpenET through an ensemble of models utilizing a variety of inputs, and AWN through a model using specific weather data from a nearby collection station. OpenET is a new tool, which holds promise but also needs time to address known issues. The OpenET models used a single ET flux tower for the entire state of Washington for validation purposes, and has a mean absolute error of 13.2% on a season long basis. The AWN data uses data collected from a Tier 1 station located in close proximity to the project, utilizes specific crop season timeframes and has a longer period of record to address issues. Several errors in the OpenET datasets became apparent in the estimating of total water use, and are highlighted in red on the attached “*Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021)*” spreadsheets. Among these issues:

- Several crop types for pivots were mis-identified in the OpenET data, including 134.3 acres which were identified as fallow/shrub when a mint crop was actually grown (Pivot 92, 2017) and spring wheat and corn crops identified when timothy hay was actually grown (Pivots 84 & 85, 2020). While this may not have impacted the ET calculations significantly, it does bring into question the integrity of the data.
- There were small discrepancies between most all of the the pivot acres identified by OpenET data versus AWN (AWN acres, which are calculated based on pivot construction, were utilized in the OpenET calculations). However, in each crop year OpenET data showed certain pivots with large discrepancies in estimated irrigated acres as compared to actual. This is due to the inclusion of non-cropped areas between pivots being shown as irrigated lands in OpenET. This is especially concerning as the ET valuations (inches/acre) provided for those fields incorporate what is essentially background ET on uncropped, non-irrigated land which will necessarily provide a lower ET valuation than when looking at only the actual irrigated pivot crop.

Dr. Troy Peters, WSU Extension Irrigation Specialist at the Irrigated Agriculture Research and Extension Center in Prosser, WA, was contacted and asked about the comparative accuracy of the two methods when determining ET in a situation such as the evaluation being conducted herein. Dr. Peters indicated that while there are uncertainties with both models, utilizing AWN with a station in close proximity will usually provide a more accurate result than OpenET.

Conclusions:

While each of these methods have value for different applications, for purposes of determined crop water use over the most recent 5-year period under Cert. S3-01062C, AWN currently provides the most relevant and accurate dataset for this particular location:

- The AWN’s real-time (15 minute interval) dataset is more accurate than the WIG 30-year average when calculating water use for specific years.
- The WIG data is 40+ years old, and does not capture recent trends towards warmer, drier years in the region.
- The AWG reference data station (Welland) is located 2.5 miles from the project area; the closest WIG station (Kennewick) is 15 miles distant and presumably does not represent water requirements at this location as accurately.

- In several instances OpenET includes fallowed lands in ET calculations for particular pivots
- The OpenET dataset is incomplete for this project area.
- OpenET misidentifies crop type on multiple pivots within the project

Soil Profile Additions

Besides water application for plant growth, additional are commonly used for such purposes as pre-fumigation and post fumigation, fumigation applications, seedbed preparation/germination, and pre-harvest and post-harvest erosion control. Mark Nielson, District Manager for the Benton/Franklin Conservation Districts, was consulted on typical application rates for different crops in this area. The results of that consultation are provided in Exhibit F.

The application rates can range from a fractional inch to 2-3 inches, depending on purpose, site conditions, and crop type. The total application can range from 2 to over 6 inches per acre. Other entities in the area have reported use averaging 4 inches per acre for these purposes. The use of water for these types of soil profile additions is typically applied to the upper couple of inches of soil.

Calculations using a range of “low”, “average” and “high” water applications as outlined in Exhibit F were prepared for the subject acres for the 2020 and 2021 crop years. The values for each category are provided in Table 2, below. The results of the calculations are provided in provided in Tables 3 and 4, below. Other crop acres could potentially be included depending on their growth stage and site conditions; this exercise focuses on those crops which consistently require soil profile adds.

Table 2: Soil Profile Addition Ranges (from Exhibit F, attached)

Crop	Range (ac-in)	"Low"	"Ave"	"High" (ac-ft)
Potatoes	4.8 – 6.75 in ¹	4.8 in (0.4 af) ¹	5.77 in (0.48 af) ¹	6.75 in (0.56 af) ¹
Corn	2-3 in ¹	2 in (0.16 af) ¹	2.5 in (0.21 af) ¹	3 in (0.25 af) ¹
New Seeding	2-3 in ¹	2 in (0.16 af) ¹	2.5 in (0.21 af) ¹	3 in (0.25 af) ¹

¹ Units: in = acre-inches; af = acre-feet per acre

Table 3: Soil Profile Additions - 2020

Crop	Acres	"Low" (ac-ft)	"Ave" (ac-ft)	"High" (ac-ft)
Potatoes	884	354	426	497
Corn	278	46	58	70
New Seeding	613.4	51	128	153
	1775.4	451 ac-ft	612 ac-ft	720 ac-ft
Totals (@ 80% app.eff.)		564 ac-ft	764 ac-ft	900 ac-ft

Table 4: Soil Profile Additions - 2021

Crop	Acres	"Low" (ac-ft)	"Ave" (ac-ft)	"High" (ac-ft)
Potatoes	754	302	363	424
Corn	483	81	101	121
New Seeding	613.4	102	128	153
	1237 acres	484 ac-ft	592 ac-ft	698 ac-ft
Totals (@ 80% app.eff.)		605 ac-ft	739 ac-ft	873 ac-ft

Note: New seeding includes crops such as alfalfa, timothy hay and mint; excludes corn and potatoes

After evaluation of the data in the above tables, and in consideration of crop rotation and varying application requirements from years to year, a conservative estimate of 2.5 inches per acre was determined to be reasonable and was added to the beneficial water use quantities. The total soil profile add for these purposes at a 2.5-inch average water requirement and 80% application efficiency is 698.7 acre-feet over 2683 acres, which falls between the “low” and “average” calculated application volumes summarized in Tables 2 and 3, above.

Summary

A total of 2683 acres have been irrigated historically and form the basis for the evaluation of beneficial use of water. The dataset from AWN has been determined to be the most relevant and accurate for use in estimating crop irrigation use at this site, and a soil profile add of 2.5 inches per acre is a reasonable estimate at this location.

The results of this analysis show that 2020 and 2021 are the highest water use years. A summary of the determined beneficial use of water over 2683 acres for these two years, together with a comparison with the quantities currently allocated under Cert. No. S3-01062C, are provided in Table 5.

Table 5: Determined Beneficial Use of Water – 2021/2022

	<i>Acres</i>	<i>Acre-Feet/Year</i>
<i>Cert. No. S3-01062C</i>	4500	18,000
<i>2020 Beneficial Use</i>	2683	11,043
<i>2021 Beneficial Use</i>	2683	12,304

Annual Consumptive Quantity (ACQ) Analysis:

Washington water law provides for changing a water right to enable irrigation of additional acres through RCW 90.03.380(1):

“A change in the place of use, point of diversion, and/or purpose of use of a water right to enable irrigation of additional acreage or the addition of new uses may be permitted if such change results in no increase in the annual consumptive quantity of water used under the water right. For purposes of this section, “annual consumptive quantity” means the estimated or actual annual amount of water diverted pursuant to the water right, reduced by the estimated annual amount of return flows, averaged over the two years of greatest use within the most recent five-year period of continuous beneficial use of the water right.”

The ACQ was calculated consistent with the statutory formula described under RCW 90.03.380(1). The results of these calculations are provided in the attached “*Comparative Crop Water Use and ACQ Calculations – 2683 acres (2017-2021)*” spreadsheet. A summary of the calculations are provided below.

ACQ Calculation Summary

2020 - Consumptive Use less Return Flows (ac-ft): 10344 – 552 = 9792 acre-feet
 2021 - Consumptive Use less Return Flows (ac-ft): 11605 – 615 = 10990 acre-feet

- **ACQ:** 9792 + 10990 = 20782 20782/2 = **10391 acre-feet**

Return Flows

Ecology has discretion regarding the disposition of estimated return flows. Ecology Program Procedure PRO-1210, “*Calculating and Applying the Annual Consumptive Quantity (ACQ)*”, April, 2018 states:

“...the quantification of the consumptive portion of the right, does not alter or diminish the total water right, but rather restricts the consumptive nature of the right after the change. 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 and can be reasonably measured.” Page 3, Paragraph 7

Additionally, as noted in Ecology Procedure Document PRO-1210, “*Calculating and Applying the Annual Consumptive Quantity (ACQ)*” the averaging of estimated greatest two years of consumptive use does not necessarily become the diversion limit of the right.

“This averaging, and indeed the quantification of the consumptive portion of the right, does not alter or diminish the total water right, but rather restricts the consumptive nature of the right after the change.”

The water for application to additional acres would come from a transition to lower water use crops; there is no intent to change the existing irrigation infrastructure at this time. This being the case, the 5% return flow estimate would not change, and could be added back into the total quantity available without impacting the consumptive use of water (the ACQ limit would not change).

Soil moisture additions for such functions as seed germination and fumigation purposes have been, and will continue to be, a beneficial use of water under this right. These quantities can also be added to the ACQ as an overall water right allocation.

The total maximum diversion quantity would be limited as follows: $11043 (2020) + 12304 (2021) = 23347/2 = 11673.50$ acre-feet/year.

Total Water Available:

- ***Water Right Maximum Limit:*** ***11673.50 acre-feet/year***
- ***ACQ Annual Limit:*** ***10391 acre-feet/year***

CROP IRRIGATION REQUIREMENTS - AgWeatherNet 2017-2021 (2683 acres w/in POU)

2017 Crop Irrigation Requirements

<u>Crop Type</u>	<u>Acres</u>	<u>ET (in)¹</u>	<u>Precip (in)</u>	<u>Net Irr Req (ac-ft)</u>	<u>Gross Irr Req (ac-ft)</u>	<u>Total Irr. Req. (ac-ft)</u>
Hay	585	42.55	2.29	3.36	4.19	2453.34
Field Corn	893	36.28	1.96	2.86	3.58	3192.48
Mint	261	38.08	2.57	2.96	3.70	965.43
Potatoes	686	38.02	1.86	3.01	3.77	2583.93
Timothy Hay	258	44			3.67	946.86
Totals	2683					10142.04

2018 Crop Irrigation Requirements

<u>Crop Type</u>	<u>Acres</u>	<u>ET (in)¹</u>	<u>Precip (in)</u>	<u>Net Irr Req (ac-ft)</u>	<u>Gross Irr Req (ac-ft)</u>	<u>Total Irr. Req. (ac-ft)</u>
Alfalfa Hay	282	44.84	1.72	3.59	4.49	1266.65
Field Corn	546	35.89	2.39	2.79	3.49	1905.31
Mint	390	40.17	2.44	3.14	3.93	1532.78
Potatoes	994	39.69	3.02	3.06	3.82	3796.87
Timothy Hay ²	427	44			3.67	1567.09
Organic Potatoes	44	38.3	1.72	3.05	3.81	167.66
Totals	2683					10236.37

2019 Crop Irrigation Requirements

<u>Crop Type</u>	<u>Acres</u>	<u>ET (in)¹</u>	<u>Precip (in)</u>	<u>Net Irr Req (ac-ft)</u>	<u>Gross Irr Req (ac-ft)</u>	<u>Total Irr. Req. (ac-ft)</u>
Alfalfa Hay	566	43.03	3.08	3.33	4.16	2355.39
Field Corn	339	36.28	2.61	2.81	3.51	1188.97
Mint	390	38	3.24	2.90	3.62	1412.13
Potatoes	1298	37.93	2.79	2.93	3.66	4751.22
Timothy Hay ²	47	44			3.67	172.49
Organic Potatoes	43	36.27	2.02	2.85	3.57	153.41
Totals	2683					10033.60

2020 Crop Irrigation Requirements

<u>Crop Type</u>	<u>Acres</u>	<u>ET (in)¹</u>	<u>Precip (in)</u>	<u>Net Irr Req (ac-ft)</u>	<u>Gross Irr Req (ac-ft)</u>	<u>Total Irr. Req. (ac-ft)</u>
Alfalfa Hay	790	44.51	3.38	3.43	4.28	3384.66
Field Corn	278	37.7	3.65	2.84	3.55	986.03
Mint	473	39.64	3.84	2.98	3.73	1763.90
Potatoes	854	38.85	3.32	2.96	3.70	3160.69
Timothy Hay ²	258	44			3.67	946.86
Organic Potatoes	30	36.07	3.23	2.74	3.42	102.63
Totals	2683					10344.76

2021 Crop Irrigation Requirements

<u>Crop Type</u>	<u>Acres</u>	<u>ET (in)¹</u>	<u>Precip (in)</u>	<u>Net Irr Req (ac-ft)</u>	<u>Gross Irr Req (ac-ft)</u>	<u>Total Irr. Req. (ac-ft)</u>
Alfalfa Hay	869	48.19	2.34	3.82	4.78	4150.38
Field Corn	483	39.75	2.32	3.12	3.90	1883.20
Mint	337	41.91	2.33	3.30	4.12	1389.42
Potatoes	754	42.6	0.57	3.50	4.38	3301.11
Timothy Hay ²	240	44			3.67	880.80
Totals	2683					11604.91

¹ ET values obtained from WSU AgWeatherNet daily real-time ET values for various crops - Welland station

² No data provided for Timothy Hay in AWN. Values taken from WSU Extension "Historic Average Water Needs Estimate."

Annual Consumptive Quantity (ACQ) Calculations

A. S3-01062C: ACQ Calculations - High 2 of last 5 Consecutive Years of Use

2020 & 2021 - AgWeatherNet Data (2020 = 10345 ac-ft 2021 = 11605 ac-ft)

Table 1 of Ecology Guidance Document 20-11-076 suggests an average return flow of 5% based on the irrigation system currently in use.

• 2020 Soil Moisture Add:	699 acre-feet
• 2020 Crop Water Use (ET)	10344 acre-feet
• 2020 Return Flows:	$10344 + 699 = 11043 \text{ ac-ft} \times 0.05 = 552 \text{ acre-feet}$
• 2020 Consumptive Use:	$10344 - 552 = \mathbf{9792 \text{ acre-feet}}$
• 2021 Soil Moisture Add:	699 acre-feet
• 2021 Crop Water Use (ET):	11605 acre-feet
• 2021 Return Flows:	$11605 + 699 = 12304 \text{ ac-ft} \times 0.05 = 615 \text{ acre-feet}$
• 2021 Consumptive Use:	$11605 - 615 = \mathbf{10990 \text{ acre-feet}}$

ACQ: $9792 + 10990 = 20782$ $20782/2 = \mathbf{10391 \text{ acre-feet}}$

Assuming there will be no change in water application methods, Ecology has discretion to add back in estimated return flows as well as beneficial use of water used for as soil moisture addition. Should return flows be added in, the resulting quantities would be:

→

Available Qa: $11043 + 12304 = 22347/2 = \mathbf{11673.50 \text{ ac-ft/yr}}$ with an ACQ not to exceed $\mathbf{10391 \text{ ac-ft/yr}}$

Exhibits

SW Cert. No. S3-01062C – Confirmation of Beneficial Use of Water

Exhibit A.....	1
SW Cert. No. S3-01062C - Map of Place of Use/Point of Diversion	2
Exhibit B.....	3
As-Built Pivot Specifications/Irrigated Area under Pivot	4
Exhibit C.....	5
S3-01062C – Map of Pivot Locations and Numbers.....	6
Exhibit D.....	7
(1): Irrigated Crop Type/Acres by Pivot.....	8
Exhibit E.....	9
Snake View, LLC: Crop Plant/Harvest Dates.....	10
Exhibit F.....	11
Typical Soil Profile Water Additions (Pre/Post Crop Harvest)	12

EXHIBIT A

Surface Water Cert. No. S3-01062C

- Map of Place of Use/Point of Diversion

Exhibit A: S3-01062C - Place of Use/Point of Diversion

(WALLA WALLA)

118° 52' 05.6773" W
046° 18' 29.2615" N +

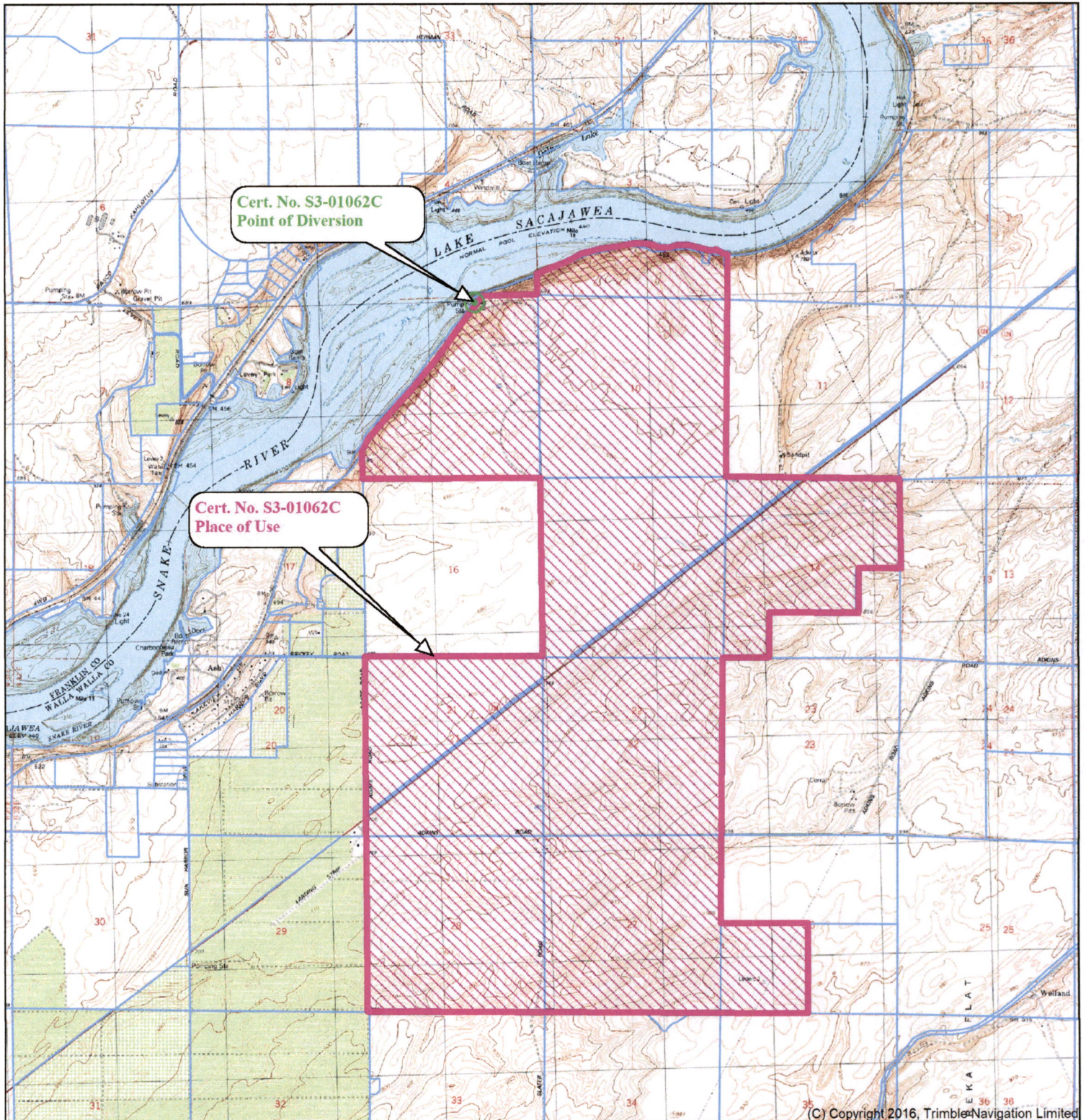
(WALLA WALLA)

WALLA WALLA QUADRANGLE

WASHINGTON

TOPOGRAPHIC SERIES (WALLA WALLA)

118° 44' 28.4844" W
+ 046° 18' 29.2615" N



(C) Copyright 2016, Trimble Navigation Limited

046° 13' 00.2985" N +
118° 52' 05.6773" W

(WALLA WALLA)
SCALE 1:48000

Printed: Thu Dec 30, 2021

+ 046° 13' 00.2985" N
118° 44' 28.4844" W

(WALLA WALLA)

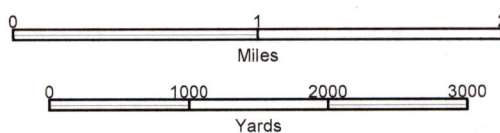


Water Right
Solutions

Declination



MN 14° 31' E



CONTOUR INTERVAL 10 FT
[BASE MAP VERTICAL DATUM]

WALLA WALLA, WA
JAN 1, 1991

EXHIBIT B

Surface Water Cert. No. S3-01062C

- As-Built Pivot Specifications/Irrigated Area under Pivot

EXHIBIT B: Calculated Irrigated Area Under Pivot

SNAKE VIEW FARMS: MECHANICAL DATA

DESCRIPTION	PIVOT TO LAST WHEEL	OVER-HANG	TOTAL STEEL	RADIUS END GUN	TOTAL LENGTH	DEGREE OF FULL CIRCLE	CALCULATION (ACRES)
11	1,442	36	1,478	65	1,543	360	171.7
12	1,600	18	1,618	40	1,658	240	132.2
13	1,442	82	1,524	30	1,554	360	174.2
21	1,308	26	1,334	40	1,374	223	84.5
22	1,476	42	1,518	25	1,543	360	171.7
24	1,442	18	1,460	30	1,490	274	121.9
25	1,440	82	1,522	40	1,562	360	176.0
41	1,480	64	1,544	50	1,594	360	183.2
42	1,304	0	1,304	40	1,344	180	65.1
43	1,046	26	1,072	40	1,112	360	89.2
44	601	0	601	40	641	209	17.2
51	710	20	730	45	775	360	43.3
52	1,193	26	1,219	40	1,259	360	114.3
53	629	0	629	45	674	185	16.8
61	1,280	36	1,316	45	1,361	360	133.6
62	1,107	18	1,125	15	1,140	180	46.9
71	1,266	26	1,292	45	1,337	270	96.8
72	1,334	0	1,334	45	1,379	360	137.1
81	734	82	816	45	861	180	26.7
82	992	26	1,018	40	1,058	360	80.7
83	866	0	866	40	906	360	59.2
84	1,253	42	1,295	40	1,335	360	128.5
85	1,253	42	1,295	40	1,335	360	128.5
86	1,266	44	1,310	40	1,350	360	131.4
87	1,282	18	1,300	40	1,340	360	129.5
88	482	42	524	40	564	360	22.9
TOTALS	30,228						2,683.3

EXHIBIT C

Surface Water Cert. No. S3-01062C

- S3-01062C – Map of Pivot Locations and Numbers

(Satellite Image
(Hybrid Street))

Exhibit C: S3-01062C (Snake View) Pivot Locations/Numbers

SATELLITE IMAGE (HYBRID STREET)

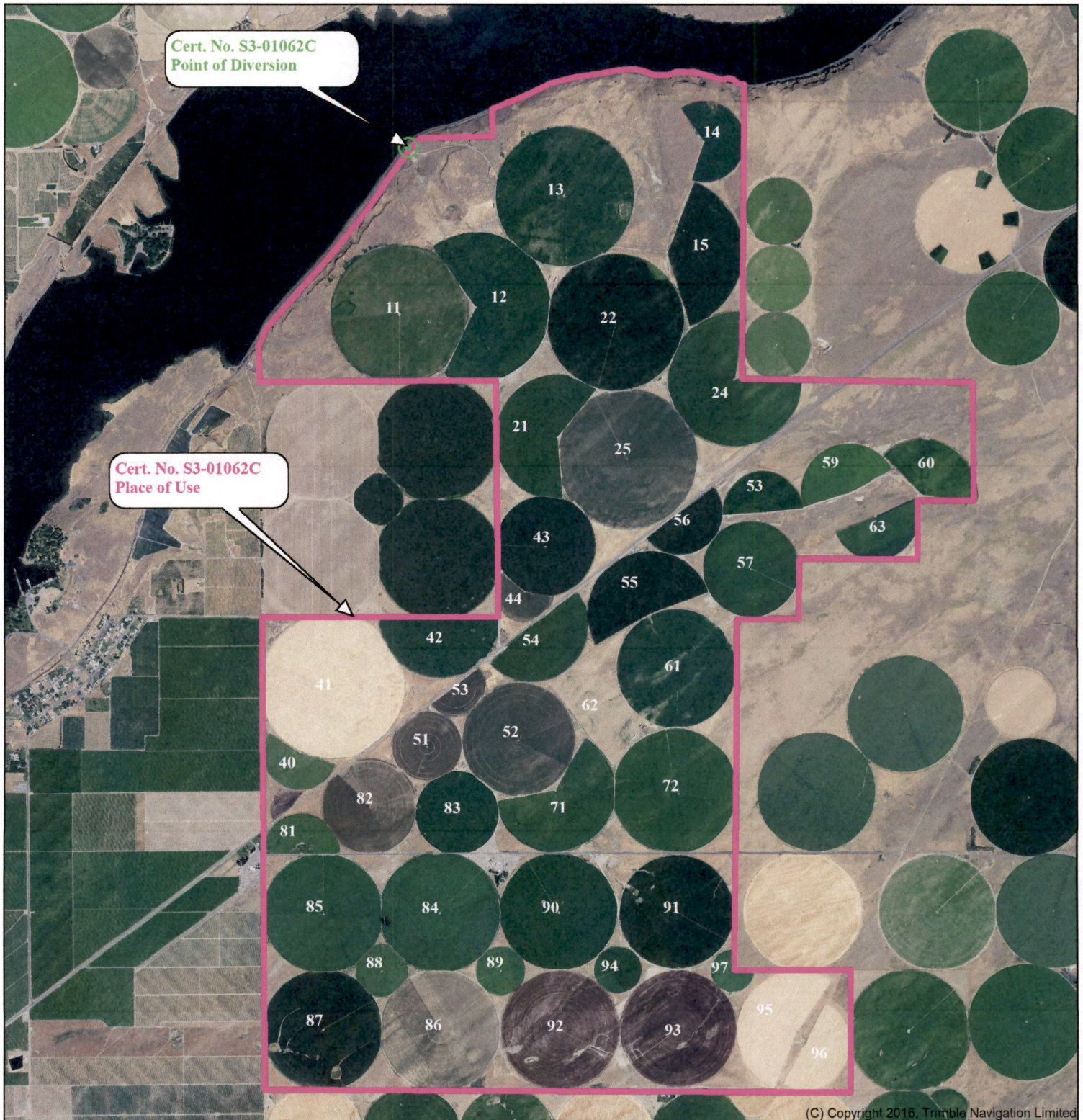
QUADRANGLE
WASHINGTON
AERIAL PHOTO SERIES

(Satellite Image
(Hybrid Street))

118° 50' 55.2401" W
046° 17' 33.4328" N +

(Satellite Image (Hybrid Street))

118° 45' 11.3052" W
+ 046° 17' 33.4328" N



046° 13' 25.9432" N +
118° 50' 55.2401" W

(Satellite Image (Hybrid Street))
SCALE 1:36112

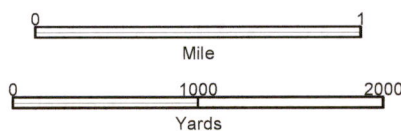
Printed: Tue Jan 04, 2022
+ 046° 13' 25.9432" N
118° 45' 11.3052" W

(Satellite Image
(Hybrid Street))

SATELLITE IMAGE
(HYBRID STREET), WA
JUL 1, 2019

WRS
Water Right
Solutions

Declination
MN
MN 14° 31' E



CONTOUR INTERVAL UNKNOWN FT
[BASE MAP VERTICAL DATUM]

EXHIBIT D

Surface Water Cert. No. S3-01062C

- Irrigated Crop Type/Acres by Pivot (2017-2021)

Exhibit D: Snakeview Crop Records 2017-2021 (S3-01062C - 2683 acres)

[illegible]

EXHIBIT E

Surface Water Cert. No. S3-01062C

- Snake View, LLC: Crop Plant/Harvest Dates

Exhibit E

Snake View: Planting & Harvest Dates by Crop Type

SW Cert. No. S3-01062C

Planting Dates by Crop Type

<u>Crop</u>	<u>Plant Date</u>	<u>Harvest Date</u>
HAY	Early Apr	May & June & Aug & Sep
FCN	Late Apr	Late Sep-Early Nov
MINT	Mid Oct	Early July & Late Oct
SPUD	Late Mar-Mid Apr	Mid Aug - Mid Oct
P/SCN	Mid Mar & Early Jul	Mid Jun- Late Sep
GRASS	Early Sept	Mid July
ORG	Late Apr	Late Sep
TIM	Mid Oct	Early Jun & Late Aug
WHT	Mid Oct	Mid July
<u>OSPUD</u>	Late Apr	Late Sep

EXHIBIT F

Surface Water Cert. No. S3-01062C

- Typical Soil Profile Water Additions (Pre/Post Crop Harvest)

Exhibit F

Soil Profile Addition Estimates

Crown Farm – Snake View (S3-01062C)

Crops in the vicinity of the Snake View, LLC farm typically require water inputs pre and post harvest which are in addition to those quantities of water required for plant transpiration. Review of literature and conversations with Mark Nielson, District Manager of the Benton/Franklin Conservation Districts provide the following estimates of for typical soil profile additions in this area:

<i>Purpose</i>	<i>Potatoes/Onions</i>	<i>Spring Crops (Corn, carrots, peas)</i>	<i>Fall Crops (Wheat)</i>
Pre-fumigation & wind erosion control, germination	2-3 inches	1 inch	1 inch
Fumigation (application)	0.75 inches	0	0
Post Fumigation	0.33 – 1.0 inches	0	0
Post Harvest/Wind erosion control	1-2 inches	1-2 inches	1-2 inches
Total	4.8 – 6.75 acre-inches	2-3 acre-inches	2-3 acre-inches

Fumigation: Typical fumigation requirements include making sure the initial soil moisture is 60-80% of field capacity so some soil moisture adjustments may be required prior to fumigation. Application of the fumigant through a center pivot then usually requires a minimum of 0.5” but more typically 1-2” of water, depending on soil type, to move the fumigant to the target treatment depth. The target pest dictates the treatment depth.

Germination: For crops with small seeds, (onions, carrots, etc.) it is common to apply a light frequent irrigation to maintain a consistent moisture level at the surface. Most of this application is lost to evaporation because the water is not really penetrating the soil surface but rather simply wetting the surface of the soil, thus it is subject to rapid evaporation.

Wind Erosion Control: While not the preferred method of wind erosion control there are times when the only method available is to run the irrigation system in an attempt to hold the soil in place. In these situations the application is very inefficient in terms of applying water that will aid in future crop grown. When irrigating for wind erosion control it is usually done at a time when wind speeds are extremely high thus a majority of the applied water is lost to evaporation.

Source: Mark Nielson, District Manager, Benton/Franklin Conservation Districts.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, WA 99205-1295 • 509-329-3400

May 18, 2022

Bob Berger
Walla Walla County Water Conservancy Board
P.O. Box 1506
Walla Walla, WA 99362

Re: Application for Change under Surface Water Certificate No. S3-01062C

In accordance with WAC 173-153-070, the Department of Ecology has received the above referenced application for change and has noted your assigned number. The Ecology WRTS number assigned to this application is:

WALL 20-03: CS3-01062C – Crown Farm Snakeview LLC

The Board may now proceed with the processing this application under WAC 173-153.

I can be reached at molly.davis@ecy.wa.gov if you have any questions.

Sincerely,

Molly Davis
Water Resources Program
Eastern Regional Office

MD:af

COPY

