File NR CG1-004221CL
WR Doc ID 5802797

State of Washington
DRAFT
REPORT OF EXAMINATION
FOR WATER RIGHT CHANGE

Changed Place of Use
Added Points of Withdrawal
Added Irrigated Acres

PRIORITY DATE	WATER RIGHT NUMBER
Prior to 1945	G1-004221CL

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
Enfield Farms, Inc. 1064 Birch Bay Lynden Road Lynden, WA 98264	Hammer Road

Total Quantity Authorized for Withdrawal

WITHDRAWAL RATE	UNITS	ANNUAL QUANTITY (AF/YR)
350	GPM	125.2

Total withdrawals from all sources must not exceed the total quantity authorized for withdrawal listed above.

Purpose

PURPOSE	WITHDRAWAL RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Irrigation	350		GPM	125.2		05/15 - 09/30

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
182	222		

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
WHATCOM	GROUNDWATER		1-NOOKSACK

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Well 35K01	410335334143	AFK795	41N	03E	35	SW SE	48.9969	-122.3827
Well 35K02	410335334143	BHE546	41N	03E	35	SW SE	48.9969	-122.3815
Well 02F01	400302196330	BHN665	40N	03E	02	SE NW	48.9871	-122.3891
Well 02F02	400302196330	BBF114	40N	03E	02	SE NW	48.9863	-122.3892
Future Well	-	NA	40N	03E	02	SW NW	-	-
Future Well	-	NA	40N	03E	02	NW NW	-	-
Future Well	-	NA	41N	03E	35	W ½ SE	-	-

Datum: NAD83/WGS84

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)

400302066330, 400302066464, 400302196330, 400302236284, 400311390397, 410335334143, 410335417176, 410335470133, and 410335508100

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Government Lot 4 (approx. NW 1/4 NW 1/4) and S 1/2 NW 1/4, Section 2, Township 40 North, Range 03 East W.M., Less Roads.

NE ¼ Section 11, Township 40 North, Range 03 East W.M., Less Roads.

SE ¼ Section 35, Township 41 North, Range 03 East W.M., Less Roads EXCEPT a tract lying within the SW 1/4 SE 1/4 defined as follows – Beginning at the SW corner of SW 1/4 SE 1/4 thence North 89°14'56" East along the South line of the SW 1/4 SE 1/4 177.48 feet to the true point of beginning, thence continuing North 89°14'56" East along said South line 391.37 feet, thence North 01°06'45" East 319.03 feet, thence South 89°14'56" West 397.70 feet, thence South 00°01'23" East 318.88 feet to the South line of the SW 1/4 SE 1/4, the true point of beginning.

Proposed Works

Four existing wells (02F01, 02F02, 35K01, and 35K02) and three future wells that are or will be less than 80 feet deep and are completed in the Sumas Outwash Aquifer. The irrigation system consists of 6-inch diameter mainlines with 4-inch sub-mains serving irrigation zones. The pumphouse facility contains sand filters for particle removal and a meter for fertigation. Water is delivered to berries using drip irrigation. When crops are irrigated with travelling big gun sprinklers, the reels are connected to the mainlines with flexible hose.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	December 31, 2021	December 31, 2026

Measurement of Water Use

How often must water use be measured?	Weekly
How often must water use data be reported to Ecology?	Annually (Jan 31)
What volume should be reported?	Total Annual Volume
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm)

Provisions

Relationship to Other Water Rights

G1-004221CL, G1-004025CL, and G1-22139C are authorized for a combined total of 800 gpm and 278.1 af/yr for the irrigation of up to 404 acres from the same points of withdrawal and within the same place of use.

Well Setback Requirement

All additional, replacement, and future points of withdrawal installed under this water right are conditioned to the flow restriction and minimum setback distances identified in the following table. The minimum setback requirement applies to existing wells at the time of well construction (for wells not

associated with these water rights or held by the water right holder) and all property lines (separating property owned by the water right holder from property not owned by the water right holder):

Setback Guidelines for New and Replacement POW Installations

New POW Maximum Flow (gpm)	Minimum Setback Distance (ft) from Existing Wells and Property Lines
800	500
700	450
600	400
500	300
400	180
300	80
200	15

Wells, Well Logs and Well Construction Standards
All wells constructed in the state must meet the construction requirements of WAC 173-160 titled "Minimum Standards for the Construction and Maintenance of Wells" and RCW 18.104 titled "Water Well Construction." Any well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard must be decommissioned.

All wells must be tagged with a Department of Ecology unique well identification number. If you have an existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag must remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

Installation and maintenance of an access port as described in WAC 173-160-291(3) is required.

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

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

Proof of Appropriation
The water right holder must file the notice of Proof of Appropriation of water (under which the superseding certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. Once Ecology has accepted the Proof of Appropriation form, the applicant shall retain the services of a

Certified Water Rights Examiner (CWRE) to verify the extent of the perfected right and prepare the necessary documentation to allow Ecology to issue a water right certificate for this project. The certificate will reflect the extent of the project perfected within the limitations of this authorization. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions. Information on hiring a CWRE is available on Ecology's website at: http://www.ecy.wa.gov/programs/wr/rights/cwrep.html or by calling the appropriate Ecology regional office.

Schedule and Inspections

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

Findings of Facts

Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I concur with the investigator on the tentative determination of the extent and validity of the water right; there will be no impairment of existing rights; the additional wells tap the same body of public ground water; the annual consumptive quantity will not be exceeded; the purpose of use is beneficial; and there will be no detriment to the public welfare.

Therefore, I ORDER approval of Application No. CG1-004221CL subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of the Order.

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

- You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW Ste 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Signed at Bellevue, Washington, this _____ day of _____, 2016.

_____

Tom Buroker, Section Manager

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov. To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

INVESTIGATOR'S REPORT
Application for Water Right Change: Enfield Farms, Inc.
Water Right Control Number: CG1-004221CL
Investigators: Jim Bucknell, Andrew B. Dunn, Adam Neff (RH2 Engineering, Inc.)

BACKGROUND

This report serves as the written findings of fact concerning Water Right Application Number CG1-004221CL. This change application is being processed by RH2 Engineering, Inc. (RH2) under a Cost Reimbursement Agreement between the applicant and the Department of Ecology. The applicant selected RH2 to process its applications on Ecology's behalf. These change applications are being processed without requiring processing of previously filed water right change applications, as allowed under RCW 90.03.265, since the transfers will not diminish the water available to earlier pending applicants for changes or transfers from the same source of supply.

Three change applications are being processed concurrently by RH2 for Enfield Farms related to the Hammer Road Fields. These change applications are CG1-22139C, CG1-004221CL, and CG1-004025CL. The overall goal is to have each water right include the same place of use, the same points of withdrawal, and to expand the number of irrigated acres to allow for the combined irrigation of up to 404 acres through the use of deficit irrigation so that the instantaneous rate, annual volume, and annual consumptive quantity under the water rights remain the same.

Change Application CG1-004221CL is a request to add three existing additional points of withdrawal (02F02, 35K01, and 35K02), allow for future wells to be drilled within a portion of the proposed place of use, increase the size of the place of use from just the southern portion of the DeHoag Property to match the entire Hammer Road Fields property (which includes the Shields – SE ¼ Section 35, T41N, R3E W.M., DeHoag – S ½ NW ¼ and Gov't Lot 4 Section 2, T40N, R3E W.M. , and Van Dalen Properties – NE ¼ Section 11, T40N, R3E W.M.), and increase the total number of irrigated acres allowed under the water right. The proposed place of use for G1-004221CL is the same area as the proposed place of use for the Change Applications associated with water rights G1-004025CL and G1-22139C, which are also owned by Enfield Farms, Inc., and are being processed concurrently.

EXISTING Water Right Attributes

Water Right Owner:	**Enfield Farms, Inc. (Claim originally under Mrs. Jacoba Zylstra)**
Priority Date:	Prior to 1945
Place of Use	S ½ NW ¼ and Gov't Lot 4, all within Section 2, Township 40 North, Range 3 East, W.M.

County	Waterbody	Tributary To	WRIA
Whatcom	Groundwater		1-Nooksack

Purpose	Rate	Unit	af/yr	Begin Season	End Season
Irrigation of 80 acres	350	GPM	160	05/15	09/30

Source Name	Parcel	Well Tag	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well 02F01	400302196330	BHN665	40N	03E	02	SE NW	48.9871	-122.3891

Sec = Section; QQ Q = Quarter-quarter of a section; Datum in NAD83/WGS84.

REQUESTED Water Right Attributes

Applicant Name:	**Enfield Farms, Inc.**
Date of Application:	6/28/2013
Place of Use:	400302066330, 400302066464, 400302196330, 400302236284, 400311390397, 410335334143, 410335417176, 410335470133, and 410335508100. Government Lot 4 (approx. NW 1/4 NW 1/4) and S 1/2 NW 1/4, Section 2, Township 40 North, Range 03 East W.M., Less Roads. NE ¼ Section 11, Township 40 North, Range 03 East W.M., Less Roads. SE ¼ Section 35, Township 41 North, Range 03 East W.M., Less Roads EXCEPT a tract lying within the SW 1/4 SE 1/4 defined as follows – Beginning at the SW corner of SW 1/4 SE 1/4 thence North 89°14'56" East along the South line of the SW 1/4 SE 1/4 177.48 feet to the true point of beginning, thence continuing North 89°14'56" East along said South line 391.37 feet, thence North 01°06'45" East 319.03 feet, thence South 89°14'56" West 397.70 feet, thence South 00°01'23" East 318.88 feet to the South line of the SW 1/4 SE 1/4, the true point of beginning.

County	Waterbody	Tributary To	WRIA
Whatcom	Groundwater		1-Nooksack

Purpose	Rate	Unit	af/yr	Begin Season	End Season
Irrigation	350	GPM	160	May 15	September 30

Source Name	Parcel	Well Tag	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well 35K01	410335334143	AFK795	41N	03E	35	SW SE	48.9969	-122.3827
Well 35K02	410335334143	BHE546	41N	03E	35	SW SE	48.9969	-122.3815
Well 02F01	400302196330	BHN665	40N	03E	02	SE NW	48.9871	-122.3891
Well 02F02	400302196330	BBF114	40N	03E	02	SE NW	48.9863	-122.3892
Future Well	-	NA	40N	03E	02	SW NW	-	-
Future Well	-	NA	40N	03E	02	NW NW	-	-
Future Well	-	NA	41N	03E	35	SE	-	-

Sec = Section; QQ Q = Quarter-quarter of a section; Datum in NAD83/WGS84.

Legal Requirements for Requested Change

The following is a list of requirements that must be met prior to authorizing the proposed changes in the point of withdrawal, the place of use, and the number of irrigated acres.

Public Notice

RCW 90.03.280 requires that notice of a water right application be published once a week, for two consecutive weeks, in a newspaper of general circulation in the county or counties where the water is to be stored, diverted, and used. Notice of this application was published in *The Bellingham Herald* on September 4 and 11, 2013.

Ms. Ria Berns, of the Department of Ecology's (Ecology) Northwest Regional Office, reported on July 20, 2015, that Ecology had received no protests on the three water right change applications associated with the Enfield Farms Hammer Road project (CG1-22139C, CG1-004221CL, and CG1-004025CL).

Consultation with the Department of Fish and Wildlife

Ecology must give notice to the Washington Department of Fish and Wildlife (WDFW) of applications to divert, withdraw, or store water. On December 2 and 28, 2015, RH2 Engineering, Inc., (RH2) sent email notice of our intent to process three groundwater change applications for Enfield Farms to Mr. Steven Boessow at the WDFW. WDFW did not provide comments.

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.

(a) It is a surface water right application for more than 1 cubic foot 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
(b) It is a groundwater right application for more than 2,250 gallons per minute
(c) It is an application that, in combination with other water right applications for the same project, collectively exceed the amounts above
(d) 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)
(e) 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.

Water Resources Statutes and Case Law

RCW 90.03.380(1) states that a water right that 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 harm or injury to other water rights.

The Washington Supreme Court has held that Ecology, when processing an application for change to a water right, is required to make a tentative determination of extent and validity of the claim or right. 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 90.44.100 allows Ecology to amend a groundwater certificate to: 1) allow the user to construct a replacement or additional well at a new location outside of the location of the original well; or 2) change the manner or place of use of the water if the following conditions apply:

(a) The additional or replacement well taps the same body of public groundwater as the original well (RCW 90.44.100(2)(a)).
(b) Where a replacement well is approved, the user must discontinue use of the original well and properly decommission the original well (RCW 90.44.100(2)(b)).
(c) Where an additional well is constructed, the user may continue to use the original well, but the combined total withdrawal from all wells shall not enlarge the right conveyed by the original permit or certificate (RCW 90.44.100(2)(c)).
(d) Other existing rights shall not be impaired (RCW 90.44.100(2)(d)).

When changing or adding points of withdrawal to groundwater rights (RCW 90.44.100), or when consolidating exempt wells with an existing permit or certificate (RCW 90.44.105), the wells must draw from the *same body of public groundwater*. Indicators that wells tap the same body of public groundwater include:

(a) Hydraulic connectivity;
(b) Common recharge (catchment) area;
(c) Common flow regime; and
(d) Geologic materials that allow for storage and flow with recognizable boundaries or effective barriers to flow.

RCW 90.03.380(1) states that the acreage irrigated under a water right may be enlarged if the annual consumptive quantity is not increased. The annual consumptive quantity is the average of the highest 2 years, of the most recent 5-year period of ongoing beneficial use of the water right, reduced by the estimated annual amount of return flows.

INVESTIGATION

Site Visit/Site Description

On September 16, 2015, Mr. Andrew B. Dunn and Mr. Jim Bucknell from RH2 and Ms. Ria Berns from Ecology met with Mr. Andy Enfield and Mr. Dan Lambert from Enfield Farms and Mr. Chuck Lindsay and Ms. Katherine Beeler, their consultants, from Associated Earth Sciences to perform the site visit. Before travelling to the proposed place of use, we met at their office and discussed general and specific farm operations and the proposed transfers.

The proposed place of use (Hammer Road) has three separate fields referred to as the Shields, DeHoag, and Van Dalen fields. Each field has a pump house that contains sand filters for particle removal, plumbing to allow for introduction of fertilizer into the irrigation system (fertigation), and a water flow meter. Mr. Enfield provided RH2 with a map showing the pump houses, mainlines, sub-mains feeding the drip systems, and the existing 15 irrigation zones. The number of irrigation zones will likely increase once additional acres are planted in berries on the Van Dalen field.

Piping on the farm ranges from 6-inch diameter mainlines to 4 to 3-inch diameter sub-mains. In addition to the pumps associated with the 4 points of withdrawal (2 located on the Shields field and 2 on the DeHoag field), there are also 3 pump houses (one located on each field). The wells on the DeHoag field are currently used to supply both the DeHoag and Van Dalen fields. There is currently no physical pipe interconnecting the DeHoag and Shields fields, but that may occur in the future to add redundancy. Water is pumped from the wells and then routed through the pump house on a field before being distributed for irrigation.

Enfield Farms utilizes staff to visit fields and perform visual checks to determine when each field needs to be irrigated. All irrigation is demand based as opposed to simply being on a regular schedule. No irrigation was occurring during the site visit due to recent rains and the end of the irrigation season.

At the time of the site visit, the Shields field was all raspberries, the DeHoag field had been planted with raspberry plugs in August after the wheat crop had been harvested for silage, and the Van Dalen field contained blueberries and pasture on the farmed acres. Mr. Enfield indicated they hope to plant additional blueberries or blackberries, on the portion currently planted in pasture, in the next few years.

With respect to crop rotation, Mr. Enfield indicated that raspberries and blackberries are often grown on a field for 5 to 10 years before being removed. After removal, the fields are usually planted with a grain, grass, or potatoes for one season before being replanted in raspberries. Enfield Farms also grows blueberries on this farm and these plants can remain commercially viable for as long as 60 years. When wheat is grown, it does not need to be irrigated. When potatoes are grown they are irrigated with travelling big gun sprinklers by the potato grower. Blueberries are irrigated either with a single hanging drip line or double drip lines laid on the ground.

For all berries irrigated within the existing and proposed places of use, water is delivered through drip irrigation.

Each well was visited to confirm the location provided in the change application. Depth to water measurements were taken by AESI staff at all wells during the site visit using a water level probe. The measurements obtained are discussed in the hydrogeology section of this investigation.

Homes located within the proposed place of use have their own private wells for domestic use.

History of Water Use

Information on the history of water use under this water right was pieced together from a variety of sources including affidavits, pump curves, aerial photos, irrigation guides, the site visit, and weather records.

Affidavits

Eight notarized affidavits relating to knowledge of farming and irrigation practices on the original place of use under water rights G1-004025CL and G1-004221CL were provided. Those affidavits were signed by Mr. Darryl Ehlers (February 16, 2016 and May 31, 2013), Mr. Fred T. Ondeck (May 25, 2013), Mr. Frank S. Ondeck, Jr. (May 28, 2013), Mr. Andy Enfield (December 29, 2015 and November 5, 2014), Mr. Allen Brown (January 6, 2016), Mr. Randy Kraght (January 8, 2016), and Mr. James H. Otter, Jr. (January 18, 2016). When considered together, these affidavits attest to the withdrawal of 600 gpm from the well identified on the claim as the point of withdrawal since before the water code and the irrigation of crops within the place of use from that period forward (**Table 1**).

Table 1. Summary of Affidavits

Affidavit	Affidavit Date	Date of First Knowledge	Crops Grown	Acreage	Peak Pumping Rate from Well 02F01
Fred T. Ondeck	5/25/2013	Mid-1950s	Grass, hay, raspberries	Approximately 120	No Information
Frank S. Ondeck, Jr.	5/29/2013	1945	Dairy, grass, corn, potatoes, berries	Approximately 120	No information
Darryl Ehlers	5/31/2013	1944	Grass, potatoes, raspberries	Approximately 120	No information
Darryl Ehlers	2/16/2016	1944	Grass, potatoes, raspberries	No information	600 gpm
Andy Enfield	11/5/2014	1995	Raspberries	No information	No information
Andy Enfield	12/29/2015	1997	No information	No information	600 gpm
Allen Brown	1/6/2016	1977	No information	No information	600 gpm
Randy Kraght	1/8/2016	1968	No information	No information	600 gpm
James H. Otter, Jr.	1/18/2016	1955	No information	No information	600 gpm

Instantaneous Rate

Since water right claims G1-004025CL (250 gpm) and G1-004221CL (350 gpm) appear to identify the same point of withdrawal, both claims are reviewed here to make sure that the actual rate pumped is not double-counted.

The original point of withdrawal under both claims appears to be well 02F01 (AESI, 2015). Affidavits attest that this well has been pumped at a rate of 600 gpm historically. AESI (2015) indicates that well 02F01 has two submersible pumps installed including a Berkeley 7T30-350 with a 30 hp electric motor and a Berkeley 6T5-115 with a 5 hp electric motor. The pump curves provided by AESI (2015) indicates that, at their design point, the pumps will produce a combined 450 gpm. AESI (2015) tested well 02F01 in 2013 and the specific capacity data obtained showed that this single well is capable of pumping at the combined claimed rate of 600 gpm, if an appropriately-sized pump was installed.

AESI (2015) indicates that well 02F02, which was drilled in 2009 approximately 280 feet south of well 02F01, has a submersible pump (Berkeley 7T30-350) and motor (30 hp electric) installed. This well has been used even though it is not currently an approved point of withdrawal under any water right. The pump curve provided by AESI (2015) indicates that, at its design point, the pump will produce 350 gpm. The combined pumping rate of both wells is 800 gpm. This pumping rate is in excess of the combined 600 gpm claimed under G1-004025CL and G1-004221CL.

Therefore, the instantaneous rate of 350 gpm under G1-004221CL has been maintained through beneficial use from the original point of withdrawal (02F01) and through well 02F02, which has been used as a point of withdrawal for beneficial use of water within the place of use, even though not previously authorized.

Irrigated Acres

Aerial photos of the existing place of use were provided with the application packet. These aerial photos were labeled with the following dates: 1943, 1955, 1961, 1975, 7/15/1998, 8/25/2011, 9/29/2012, and 5/5/2013. Aerial photos from 1998 to 2015 were also viewed using Google Earth™.

The place of use of this water right is also included within it the smaller place of use of G1-004025CL. Therefore, the total acres irrigated within the larger place of use will be determined and then the irrigated acres within the place of use that includes G1-004025CL will be split between the two claims. The aerial photo from 1943 was taken close to when the ground water code was enacted (June 1945). This aerial photo, shows that there are buildings in the SE ¼ NW ¼ Section 2, Township 40 North, Range 3 East W.M., an area approximately 42 acres in size surrounding the building is cultivated with crops growing. Much of the remainder of the property has been cleared, but the stumps have not yet been removed and the ground is not cultivated. An aerial photo from 1955 shows the same buildings, but the entire remainder of the place of use has been cleared (with stumps removed) and it is actively cultivated. The acreage being used for agricultural production in 1955 was a total of approximately 116 acres. Based on the language in the claim, the aerial photo evidence, and the language in RCW 90.44.050, it appears the property owner had begun ground water use prior to 1943 and was in the process of developing that water use when the ground water code was enacted. Therefore, the claims do appear to represent a pre-code water right. The farmed acreage has remained the same from 1955 through present day.

Based on the evidence available, it is tentatively determined that 116 acres, of the original 120 acres that was identified as being presently used on the two water right claims, has been maintained through beneficial use. The irrigated acreage has been divided between the two claims as shown in **Table 2**.

Table 2. Split of Irrigated Acreage Between G1-004025CL and G1-004221CL

Water Right	Acres
G1-004025CL	38
G1-004221CL	78
Total	**116**

Table 3. Recent Irrigation Under G1-004221CL

Irrigation Season	Crop	Acres
2011	Raspberries	72
	Pasture/Turf	4

2012	Raspberries Pasture/Turf	72 4
2013	Raspberries Pasture/Turf	72 4
2014	Raspberries Pasture/Turf	72 4
2015	Wheat (unirrigated to August) Raspberries plugs (August on) Pasture/Turf	72 72 4

Annual Volume

While there is currently a water meter located in the pump house to allow fertigation, there are currently no water meters installed on the points of withdrawal. Therefore, RH2 relied on the current Washington Irrigation Guide (WIG, 1985), older irrigation guides (1982 and 1969), weather data, and Water Resources Guidance GUID-1210 to estimate the annual volume of water pumped under this water right.

The first thing to be determined is the crop irrigation requirement (CIR). **Table 3** identified which crops have been irrigated under the claim in recent years. The primary crop is raspberries with less water going toward irrigation of grass and trees around the headlands and bordering the property. The CIR is the amount of water that the crop would need to not experience any stress due to water availability. AESI (2015) proposed a distance-weighted average for calculation of the crop irrigation requirements for raspberries between the two closest stations (Blaine CIR = 17.48 inches and Clearbrook CIR = 15.57 inches) with the farm located 3 miles from Clearbrook and 16 miles from Blaine. RH2 agrees that this is a reasonable assumption. In addition, since the season of use, as specified on the claim, starts in June, the CIR data for May was excluded from the calculation. The weighted average of data from the WIG (1985) suggests that with a 2-year return interval, the crop irrigation requirement for a raspberry and pasture/turf crop is 15.87 inches and 12.51 inches, respectively.

The WIG (1985) CIR estimates are for an average year and are based on almost 30 years of weather data collected from 1951 to 1980. The University of Washington – Climate Impacts Group has predicted that over the next 10 to 30 years, average air temperatures in the Pacific Northwest will be 2 to 3 degrees Fahrenheit higher than the 1970 to 1999 averages and that less precipitation will occur during the summer months due to global climate changes in Washington State. The result of these changes has been significantly warmer and drier irrigation seasons in Whatcom County. For example, the available weather data shows that the period of May through September was on average more than 2 degrees Fahrenheit warmer from 2011 through 2015, than the average temperature from the Blaine, Bellingham 3 SSW, and Clearbrook stations provided in the WIG (**Table 4**). Therefore, it is apparent that, because the WIG values are based on weather data from 1951 to 1980, utilizing the WIG estimated CIR would result in underestimating the amount of irrigation water an irrigator has actually been using over at least the last five years.

Station Circular 512 (Irrigation Water Requirements Estimates for Washington, November 1969) and EB1513 (Irrigation Requirements for Washington Estimates and Methodology, 1982) show that for the Bellingham station (closest location to the site) the crop irrigation requirement will increase as the return period increases.

Table 4. Weather Comparison of WIG Averages to Actual Data

	Temperature (degrees F)			Precipitation (inches)		
Irrigation Season	WIG Average	Actual	Difference (Actual - WIG)	WIG Average	Actual	Difference (Actual - WIG)
2011	58.70	**59.30**	**0.60**	9.80	**9.71**	**-0.09**
2012		**59.71**	**1.01**		**8.34**	**-1.46**
2013		61.65	2.95		11.46	1.66
2014		62.39	3.69		12.10	2.30
2015		62.54	3.84		6.81	-2.99

Notes:
Irrigation season is considered to be May through September.
Annual data is average of the Clearbrook, Blaine, and Bellingham 3 SSW weather stations.
Weather data from 2008 through 2014 was provided with the change applications (AESI, 2015). 2015 data provided upon request by AESI.

Publication EB1513 presents CIR estimates for various crops (based on average weather data from 1948 through 1973) and 2-, 5-, 10-, and 20-year return intervals to account for climatic variability. Publication EB1513 states that the CIR 2-year return period values will be adequate on the average, once each 2 years. Similarly, the 5-year CIR values, 10-year CIR values and 20-year CIR values will be adequate on the average, 4 of 5 years, 9 of 10 years and 19 of 20 years, respectively. Again, it should be noted that the CIR values and return periods are based on weather data collected from 1948 through 1973 and, as discussed above, likely underestimate the current CIR values and return interval time periods due to ongoing global climate change.

Publication EB1513 indicates that for Bellingham (closest location to site) the raspberry crop CIR increased by approximately 17 percent going from the 2-year to the 10-year return interval. Increasing the weighted-average WIG raspberry CIR (15.87 inches) by 17 percent results in a 18.57 inch CIR for raspberries. RH2 has assumed that increasing the WIG values to represent the anticipated 10-year return interval for the raspberries is a reasonable way to estimate that crop's actual CIR over the past five years. A similar correction has not been made for the irrigation of the grass and trees since that is not the primary focus of the operation.

Ecology guidance document 1210 indicates that the efficiency of the trickle/drip micro-irrigation methods utilized by Enfield Farms to irrigate raspberries ranges between 70% and 95%, with an average of 88%. Guidance document 1210 indicates that farmers that operate systems near the higher end of the range often exhibit the following:

- Newer system infrastructure
- Active maintenance program
- Knowledge of seasonal crop evapotranspiration rates
- Scheduling irrigation in response to crop demand
- Ground-truthing of soil moisture.

Enfield Farms is a family-owned business that has been in operation in Whatcom County for over 40 years. Their system exhibits each of these characteristics. They replace their irrigation system infrastructure on a routine schedule or when they observe signs of wear that could lead to a loss of water. They operate a research facility and routinely develop new strains of raspberries and other crops that require less water and are more resistant to disease. They are recognized experts regarding farming practices in Whatcom

County. For these reasons, the efficiency of trickle/drip micro-irrigation systems used in the Enfield Farms fields is assumed to be average to high.

The total irrigation requirement that was originally claimed was 24 inches over 80 acres. Assuming an average irrigation efficiency of 88 percent and a CIR of 18.57 inches for the raspberries equals a total irrigation requirement (TIR) of 21.10 inches, or 1.76 feet. Multiplying 1.76 feet by 74 acres equals an annual volume of 130.1 afy. Assuming an irrigation efficiency of 100 percent and a CIR of 12.51 inches for the grass and trees equals a TIR of 12.51 inches, or 1.04 feet. Multiplying 1.04 feet by 4 acres equals an annual volume of 4.2 afy. The total annual volume calculated to be used under this claim is 134.3 afy.

Proposed Use

The primary goals of Change Application CG1-004221CL is to add three existing additional points of withdrawal (02F02, 35K01, and 35K02), allow for future wells to be drilled within the place of use, change the place of use to include all properties associated with the Hammer Road Fields, and increase the number of irrigated acres allowed under the three water right to a combined 404 acres. This application is tied to change applications for the following water rights:

- G1-22139C
- G1-004025CL

The applicant wishes to expand the place of use allowed under all three rights to the same place of use, include all wells as points of withdrawal under each right, such that water from the water right could be pumped from any well and used anywhere within the proposed place of use.

As discussed in the next section, the quantity of water allowed for the expansion of acreage will be the average consumptive quantity as calculated based on the average of the 2 highest years of use in the last 5 years of continuous beneficial use, reduced by the estimated annual amount of return flows. The applicant intends to use deficit irrigation. Therefore, Enfield Farms intends to apply water at less than the optimum amount required by the plants as a means of maximizing the efficiency of its water use on the fields, rather than maximizing its per-plant output. This irrigation technique will allow Enfield Farms to stay within the limits of its water right as authorized by Ecology.

Annual Consumptive Quantity

A change in the place of use, point of diversion (withdrawal), 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 the change results in no increase in the annual consumptive quantity (ACQ) of water used under the water right (RCW 90.03.380). ACQ means the estimated or actual amount of water diverted in a year, allowed under a water right, reduced by the estimated annual amount of return flows. This quantity is then averaged using the greatest 2 years of use within the most recent 5-year period of continuous beneficial use of the water right. **Table 3** contains information on the crops grown within the place of use over the past five year period.

The ACQ analysis for this change application will be performed on the 2011 through 2015 irrigation seasons (**Tables 3** and **4**). Based on the data available, it appears that 2011 and 2012 represent the years when weather conditions and the crops irrigated would require application of the most irrigation water. Therefore, based on this data, these 2 years will be used as the 2 highest years of use within the last 5 years of consecutive water use.

As was discussed in the History of Water Use section above, there are no metering records that would allow an evaluation of annual TIR or ACQ for each of the past 5 years. However, the annual quantity estimate previously discussed indicates that it is reasonable to assume that 134.3 afy has been used on the property for irrigation of 74 acres of raspberries and 4 acres of grass and trees during 2011 and 2012. **Table 5** shows that 125.2 afy is consumptive, while 9.1 afy is return flow.

Table 5. Annual Consumptive Quantity Calculation

Crop	Actual CIR (inches)	Actual CIR (feet)	WR Limit (feet)	Application Efficiency (%)	Cons. Use Efficiency (%)	TIR (feet)	TIR (af/yr)	Cons. Use (af/yr)	Return Flow (af/yr)
Raspberries	18.57	1.55	2.00	88	93	1.76	130.1	121.0	9.1
Pasture/turf	12.51	1.04	2.00	100	100	1.04	4.2	4.2	0.0
						Total	134.3	125.2	9.1

CIR = Crop irrigation requirement (May through September, weighted average of distance to Blaine and Clearbrook stations)
WR Limit = additive annual volume of 160 af/yr divided by 80 acres
Application Efficiency = 88% raspberries from GUID-1210, 100% grass since not fully irrigated
af/yr = acre-feet per year
Cons. = Consumptive
Area: 74 acres raspberries, 4 acres pasture/turf
Years: 2011 and 2012
Irrigation Method: Trickle/drip
Cons. Use Efficiency = Application Efficiency + % Total Evaporated from Ecology GUID-1210
TIR = Total irrigation requirement. Actual CIR / Application Efficiency.
Cons. Use = TIR x Cons. Use Efficiency

Since the proposed use requests to increase the number of irrigated acres to the point that there will be no return flow, only the consumptive annual volume (125.2 afy) can be carried through the water right change. In his affidavit (dated November 5, 2014), Mr. Andy Enfield acknowledged that if the change is approved, Enfield Farms will be deficit irrigating its crops (applying less water than the crop can consume) and that the deficit irrigation practices are reasonable and adequate for growing the crops they plan to grow on these fields. It is also possible that the water right holder might need to practice crop rotation and irrigate less than the full requested 404 acres in every given year in order to be able to provide a higher duty on the remaining fields.

Period of Use

The water right record for G1-004221CL identifies the period of use for irrigation as May 15 through September 30. No change has been requested for the period of use and it will remain the same.

Other Rights Appurtenant to the Place of Use

Relying on Ecology's Water Resources Explorer (accessed June 20, 2015), the following water right claim was identified as being appurtenant to the existing place of use in addition to the other water right claim being changed (G1-004025CL):

Water Right Claim G1-004026CL
Name: Mrs. Jacoba Zylstra
Quantity of Water Claimed: 50 gpm
Annual Quantity Claimed: 5 af/yr
Date of First Putting Water to Use: Prior to 1945
Purpose for Which Water is Used: Domestic, Stockwater, Dairy Operation

This claim likely represents beneficial use by a home and shop located in the SE ¼ NW ¼ Section 02, Township 40 North, Range 3 East W.M. Therefore, it is appropriate for all irrigation within the existing place of use to be assigned to either G1-004025CL, or G1-004221CL.

Besides the water right claim referenced above and the other water rights being changed (G1-004025CL and G1-22139C), there are three water right certificates and two water right claims whose mapped place of use is associated with the proposed place of use. These water rights are described below:

Certificate G1-26398C
Name: City of Sumas
Instantaneous Rate: 860 gpm
Annual Volume: 1,376 afy
Purpose: Municipal
Source: Wells

The City of Sumas water right is for municipal supply. The proposed place of use falls within the place of use (service area) of the City of Sumas water right. Water from the City of Sumas has not been used for agricultural irrigation within the proposed place of use.

Certificate GWC 2418
Name: Delta Water Association
Instantaneous Rate: 186 gpm
Annual Volume: 168 afy
Purpose: Municipal
Source: Wells

Certificate G1-24815C
Name: Delta Water Association
Instantaneous Rate: 380 gpm
Annual Volume: 24.3 afy
Purpose: Municipal
Source: Wells

Both Delta Water Association water right certificates are for municipal supply. The proposed place of use falls within the place of use (service area) of the Delta Water Association water right. Water from the Delta Water Association has not been used for agricultural irrigation within the place of use.

Water Right Claim G1-102571CL
Name: John D. Shields
Rate of Water Claimed: NA
Annual Volume Claimed: NA

Date of First Putting Water to Use: NA
Purpose for Which Water is Used: Domestic and Stockwater

This claim was filed by the same individual who was originally granted G1-22139C, which is one of the water rights being changed. It is assumed that the water use under this claim covers the domestic and stock use associated with the current residence within the proposed place of use on parcel 410335305016, which was retained by Ruth E. Shields when the property was sold to Enfield Farms and will not be part of the place of use following the change.

Water Right Claim G1-027779CL
Name: John Van Dalen
Quantity of Water Claimed: 5 gpm
Annual Quantity Claimed: 1 af/yr
Irrigation Acres Claimed: None
Date of First Putting Water to Use: December 15, 1972
Purpose for Which Water is Used: Domestic

This claim likely represents beneficial use by the home located in the NW ¼ NE ¼ Section 11, Township 40 North, Range 3 East W.M. The date of first use suggests that this is for a permit-exempt withdrawal as opposed to being for a water right that existed prior to the enactment of the groundwater code (RCW 90.44).

Therefore, all agricultural irrigation within the proposed place of use will be associated with the three water rights being changed; G1-004025CL, G1-004221CL and G1-22139C.

Hydrologic/Hydrogeologic Evaluation

A separate hydrogeologic memorandum was prepared by Adam Neff, L.G. focusing on the same body of public groundwater test and impairment (RH2 Engineering Technical Memorandum, December 10, 2015). A summary of that memorandum is presented here and more detail can be obtained from the memorandum, located in the water right file.

The points of withdrawal and place of use involved in these water right changes lie within the geographic feature commonly referred to as the Lynden Terrace, northeast of the City of Lynden. The terrace is an upland area, approximately 100 feet above the Nooksack River valley to the southwest and approximately 70 feet above Johnson Creek to the southeast.

The original POWs for G1-22139C fall within the Fishtrap surface water subbasin, while the original POW for G1-004025CL and G1-004221CL are within the Johnson Creek surface water subbasin (as defined by the WRIA 1 watershed planning group in 2002). The POU lays near the headwaters of Fishtrap Creek, Squaw Creek, and Bostwick Creek; the former flowing southwest into the Nooksack River and the latter two flowing east/southeast into Johnson Creek then the Sumas River. Both the Shields and the Van Dalen properties drain east to Johnson Creek, as well as the eastern portion of the DeHoag property, while the western portion drains into the Fishtrap subbasin. Both the original and proposed POWs are located within the Fishtrap Creek groundwater subbasin.

All existing and proposed POWs are completed within the Sumas Aquifer. The Sumas outwash aquifer is composed of medium to coarse sand at this location and is up to 75 feet thick. Deeper sediments (Everson

Glaciomarine Drift) are fine-grained and do not yield water in sufficient quantities, or of high enough quality, to be used for irrigation supply.

The water table is less than 20 feet below ground surface in the late summer and fluctuates by approximately 4 to 5 feet over the course of the year due to changes in recharge and groundwater use.

Pumping impacts on neighboring wells

Nearby water rights were reviewed to determine the approximate distance between the proposed wells and existing wells for purposes of calculating the anticipated interference drawdown in the neighboring wells. In addition to the existing on-site wells (35K01, 35K02, 2F01, and 2F02), Enfield Farms has requested the ability to add additional wells in the future within the Shield and DeHoag properties portion of the place of use. Since exact locations for the future wells have not been specified, analysis for impact will be done assuming that the wells are located on the edge of the parcel boundaries closest to any neighboring wells with which they could interfere. This "worst-case" assumption is made to be as protective of neighboring well users as possible. Based on the Ecology's Water Resources Explorer web viewer there are water rights, not held or operated by Enfield Farms, within the POU and within the area requested for future POWs.

Interference drawdown was calculated separately for the existing POWs and for future POWs. Two of the four existing POWs were pump tested by AESI to calculate the transmissivity of the aquifer. For the future POWs area averages from AESI (which were more conservative than Cox and Kahle) were used for the drawdown analyses.

For the existing POWs a transmissivity of 19,191 cubic feet per day per foot (ft^2/day) was used. The storage coefficient was estimated to be 0.27 for the unconfined aquifer. If the combined instantaneous rate (800 gpm) of all three water rights being changed is pumped continuously from one well until the annual volume is reached (277.5 af/yr), the maximum anticipated interference drawdown at a distance of 100, 500, and 1,000 feet is 5.7 feet, 3.1 feet, and 2.1 feet, respectively, with a maximum radius of influence of 3,139 feet. These data indicate that the anticipated radius of interference is not substantial as long as a minimum of 100 feet of separation between existing and future wells is maintained.

For the future POWs, a transmissivity of 7,088 cubic feet per day per foot (ft^2/day) was used. The storage coefficient was estimated to be 0.27 for the unconfined aquifer. If the combined instantaneous rate (800 gpm) of all three water rights being changed is pumped continuously from one well until the annual volume is reached (277.5 af/yr), the maximum anticipated interference drawdown at a distance of 100, 500, 1,000, and 2,000 feet is 10.6 feet, 5.1 feet, 2.9 feet, and 1.0 feet, respectively, with a maximum radius of influence of 2,149 feet. These data indicate that the anticipated interference is not substantial as long as a minimum of 500 feet of separation between future wells and any existing well is maintained.

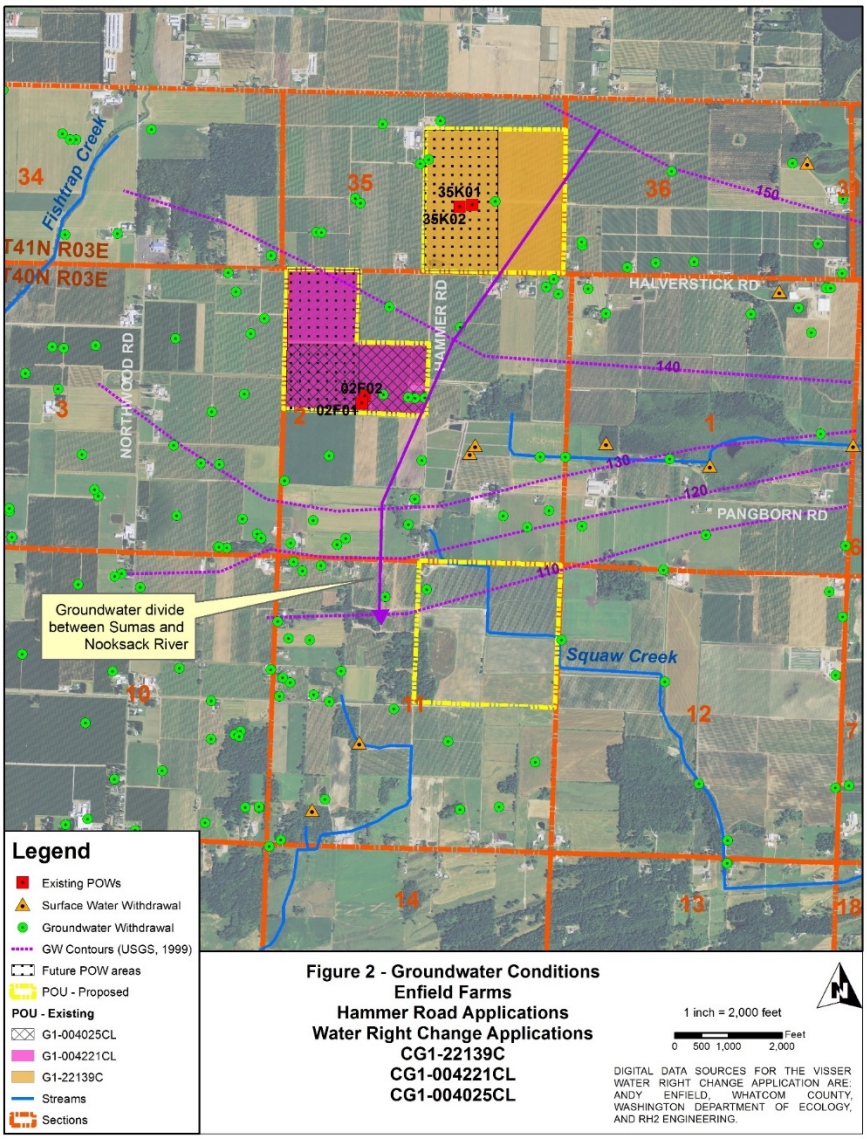

Figure 2. Original and Proposed Points of Withdrawal with Groundwater Flow

(Groundwater elevations and flow directions based on Cox and Kahle (1999), water level measurements.)

Same Body of Public Groundwater

In order for the requested additional points of withdrawal to be added to each groundwater right, all points of withdrawal must tap the same body of public groundwater. RH2 has concluded that all existing and proposed wells located on the DeHoag and Shields properties tap the same body of public groundwater based on the following facts.

1. The original, existing, and proposed points of withdrawal are currently tapping or will tap the shallow Sumas outwash aquifer.
2. The original and proposed POWs are located within the Fishtrap Creek groundwater subbasin. The proposed future POWs will be restricted to the W ½ of the NW ¼ of Section 2 (T40N R3E) and W ½ of the SE ¼ of Section 35 (T41N R3E) to ensure the same body of public groundwater is

tapped. This reduces the area requested by the applicant who requested all of the SE ¼ of Section 35. However, the mapped groundwater surface (Cox and Kahle, 1999) shows the groundwater divide almost splitting Section 35, with the east half draining into the Johnson Creek/Sumas River groundwater subbasin.

3. Groundwater flow for the area is to the southwest, based on the mapping by AESI, United States Geological Survey, and on-site well measurements. A major groundwater flow divide exists near the site, but is located east of both the existing and proposed POWs, as described above.
4. The potential maximum distance between an existing and proposed POW is 2,100 feet.

Impairment Considerations

Impairment of Minimum Instream Flow Water Rights

The term "instream flow" is used to identify a specific stream flow (typically measured in cfs) at a specific location for a defined time, and typically following seasonal variations. Instream flows are usually defined as the stream flows needed to protect and preserve instream resources and values, such as fish, wildlife and recreation. Instream flows are most often described and established in a formal legal document, typically an adopted state rule.

Once established, a minimum flow constitutes an appropriation with a priority date as of the effective date of the rule establishing the minimum flow (RCW 90.03.345). Thus, a minimum flow set by rule is an existing right which may not be impaired (RCW 90.03.345; RCW 90.44.030).

Fishtrap Creek, which is tributary to the Nooksack River, is the nearest year-round watercourse, located west of the site, approximately 4,000 feet away. This is beyond the theoretical radius of influence and thus will not be impacted differently due to the change.

Impairment, Qualifying Ground Water Withdrawal Facilities, and Well Interference

Drawdown calculations show that the combination of hydrogeologic characteristics of the Sumas Outwash Aquifer at the project location and the worst-case pumping scenario (maximum instantaneous withdrawal rate for the maximum duration of time) could lead to significant drawdown in several neighboring wells.

Based on results and modeled extrapolations from the AESI pump tests on the two DeHoag wells, pumping at the maximum combined rate, 800 gpm, within the four existing POWs will not impact neighboring wells more than existing, based on their distance from adjacent properties and neighboring wells.

All additional POWs installed in the future may be installed within the areas identified in **Figure 2**, but with setback and or flow restrictions to ensure impacts to neighboring rights are limited. At the full instantaneous pumping rate of 800 gpm, a 500-foot minimum setback should be established around all existing wells (not associated with these water rights) and all property lines. If the flow is restricted within the new well(s), then a smaller setback can be established (see **Table 6** for guidelines).

Table 6. Setback Guidelines for New and Replacement POW Installations

New POW Maximum Flow (gpm)	Minimum Setback Distance (ft) from Existing Wells and Property Lines
800	500
700	450
600	400
500	300
400	180
300	80
200	15

On July 20, 2015, Ecology was asked if it had received any complaints from well owners near the Hammer Road Farm related to declining water levels, excessive seasonal drawdowns, and wells pumping air. On the same day, Ms. Kasey Cykler, Ecology WRIA 1 Watermaster, responded that Ecology had not received any recent complaints in that area.

Public Welfare Considerations

The changes proposed by the applicant will not be detrimental to the public welfare.

Consideration of Protests and Comments

This application was not protested by any party.

Conclusions

The changes requested will neither impair existing rights, nor be detrimental to the public welfare. Given that no formal protests were received and WDFW has not provided comments raising any concerns, the change should be approved as recommended below.

Table 7. Summary of Recommended Water Right Change Decisions, Enfield Farms, Hammer Road

Water Right	Qi (gpm)	Qa (af/yr)	Irrigated Acres (additive/non-additive))	Place of Use	Points of Withdrawal
G1-004025CL	250	52.0	76 / 328	Shields, DeHoag, and VanDalen Fields	35K01, 35K02, 02F01, 02F02, and Three Future Wells
G1-004221CL	350	125.2	182 / 222		
G1-22139C	200	100.9	147 / 257		
Total	800	278.1	404		

RECOMMENDATIONS

Based on the investigation and conclusions included in this ROE, RH2 recommends that this request for a water right change be approved in the amounts and within the limitations listed below and subject to the provisions listed above.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

- 350 gpm (additive)
- 125.2 af/yr (additive)
- Irrigation of 404 acres in total - 182 acres (additive) and 222 acres (non-additive)
- May 15 through September 30

Points of Withdrawal

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Well 35K01	410335334143	AFK795	41N	03E	35	SW SE	48.9969	-122.3827
Well 35K02	410335334143	BHE546	41N	03E	35	SW SE	48.9969	-122.3815
Well 02F01	400302196330	BHN665	40N	03E	02	SE NW	48.9871	-122.3891
Well 02F02	400302196330	BBF114	40N	03E	02	SE NW	48.9863	-122.3892
Future Well	-	NA	40N	03E	02	SW NW	-	-
Future Well	-	NA	40N	03E	02	NW NW	-	-
Future Well	-	NA	41N	03E	35	W ½ SE	-	-

Place of Use

The place of use includes the following areas:

Whatcom County Parcel Numbers: 400302066330, 400302066464, 400302196330, 400302236284, 400311390397, 410335334143, 410335417176, 410335470133, and 410335508100

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Government Lot 4 (approx. NW 1/4 NW 1/4) and S 1/2 NW 1/4, Section 2, Township 40 North, Range 03 East W.M., Less Roads.

NE ¼ Section 11, Township 40 North, Range 03 East W.M., Less Roads.

SE ¼ Section 35, Township 41 North, Range 03 East W.M., Less Roads EXCEPT a tract lying within the SW 1/4 SE 1/4 defined as follows – Beginning at the SW corner of SW 1/4 SE 1/4 thence North 89°14'56" East along the South line of the SW 1/4 SE 1/4 177.48 feet to the true point of beginning, thence continuing North 89°14'56" East along said South line 391.37 feet, thence North 01°06'45" East 319.03 feet, thence South 89°14'56" West 397.70 feet, thence South 00°01'23" East 318.88 feet to the South line of the SW 1/4 SE 1/4, the true point of beginning.

Report by: _____

Jim Bucknell – RH2 Engineering, Inc. Date

Report by: _____

Andrew B. Dunn, L.G., L.HG., CWRE – RH2 Engineering, Inc. Date

Report by: _____

Adam Neff, L.G. – RH2 Engineering, Inc. Date

Reviewed by: _____

Buck Smith, L.G., L.HG. - Water Resources Program Date

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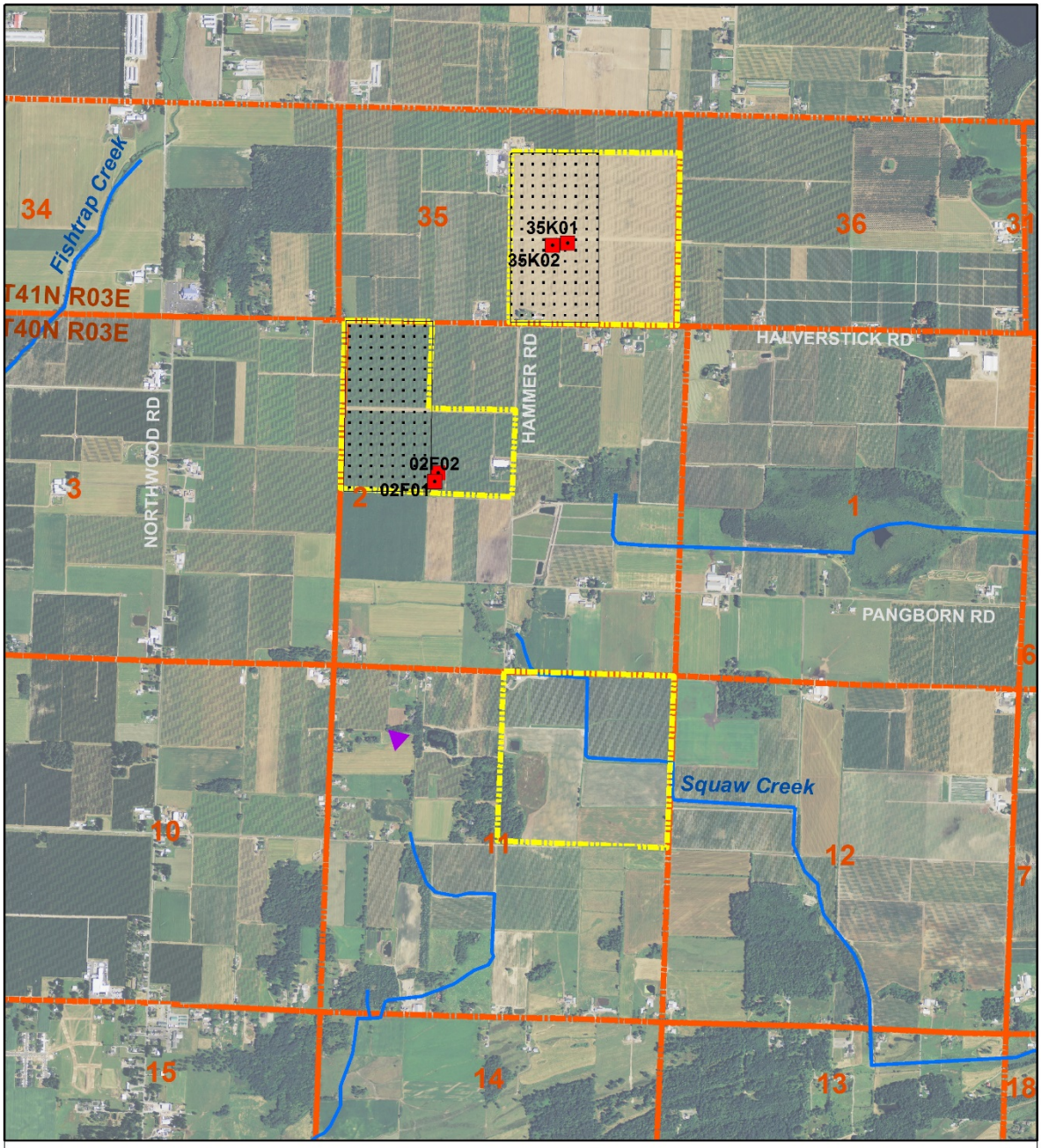
ATTACHMENT


Fishtrap Creek
34
35
36
35K01
35K02
T41N R03E
T40N R03E
HALVERSTICK RD
HAMMER RD
NORTHWOOD RD
02F02
02F01
3
2
1
PANGBORN RD
6
Squaw Creek
10
11
12
7
15
14
13
18
Legend
Existing Enfield POW
Future POW areas
POU - Authorized
Streams
Sections
Hammer Road Applications
Water Right Change Applications
Enfield Farms
CG1-22139C
CG1-004221CL
CG1-004025CL
N
1 inch = 2,000 feet
Feet
0 500 1,000 2,000
DIGITAL DATA SOURCES FOR THE VISSER WATER RIGHT CHANGE APPLICATION ARE: ANDY ENFIELD, WHATCOM COUNTY, WASHINGTON DEPARTMENT OF ECOLOGY, AND RH2 ENGINEERING.