



State of Washington
**REPORT OF EXAMINATION
FOR WATER RIGHT CHANGE**

File NR CG2-GWC2686@1
WR Doc ID 4809924

Added or Changed Point of Withdrawal/Diversion

PRIORITY DATE January 31, 1956	WATER RIGHT NUMBER CG2-GWC2686@1
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MAILING ADDRESS WASHINGTON STATE UNIVERSITY PO BOX 1495 SPOKANE WA 99210	SITE ADDRESS (IF DIFFERENT) WASHINGTON STATE UNIVERSITY 14204 NE SALMON CR AVE VANCOUVER WA 98686-9600
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Total Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
50	GPM	20

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

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Irrigation	50		GPM	20		MARCH 1 - OCTOBER 31

REMARKS: This water right shares a point of withdrawal (DAW-1) with CG2-GWC1851.

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
31			

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
CLARK	GROUNDWATER	N/A	28-SALMON-WASHOUGAL
CLARK	GROUNDWATER	N/A	28-SALMON-WASHOUGAL

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
WELL A	1859480000	ALK126	03N	01E	24	NE NW	45.7362	-122.6334
Well DAW 1	1859480000	BAA379	03N	01E	24	NE SW	45.7293	-122.6338

Datum: NAD83/WGS84

Place of Use (See Attached Map)

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Property owned by WSU comprised of parcels 181684000, 185948000, 185964000, 185983000, 185994000, 186017000, situated within the N ½, and the SW ¼, and the W ½, NW ¼ SE ¼ of Section 24, T. 3 N., R. 1 E.W.M. lying north of NE Salmon Creek Avenue, Along with the S ½ S ½ SE ¼, and the E ½ E ½ SE ¼ SW ¼, of Section 13, T. 3 N., R. 1 E.W.M.

Proposed Works

Well A: 12 inches in diameter by 262 feet deep
DAW-1: 6 inches in diameter by 540 feet deep

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	May 1, 2018	May 1, 2023

Measurement of Water Use

How often must water use be measured?	Monthly
How often must water use data be reported to Ecology?	Upon Request by Ecology
What volume should be reported?	Total Annual Volume (acre-feet per year)
What rate should be reported?	A Peak Rate of Withdrawal (gpm)

Provisions

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.

Water Use Efficiency

Use of water under this authorization will 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.

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, diversions, measuring devices and associated distribution systems for compliance with water law.

Proof of Appropriation

The water right holder must file the notice of Proof of Appropriation of water (under which the 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. The certificate will reflect the extent of the project perfected within the limitations of the water right. 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.

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 that water is available from the source in question; that there will be no impairment of existing rights; that the purpose(s) of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of CG2-GWC2686@1, subject to existing rights and the provisions specified above.

Your Right To Appeal

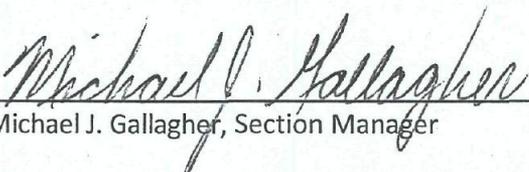
You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

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	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW Ste 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

Signed at Olympia, Washington, this 17th day of April 2013.


Michael J. Gallagher, 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
 Tammy Hall, Department of Ecology
 Water Right Control Number CG2-GWC2686@1

BACKGROUND

On June 6, 2011, Joe Steinbrenner, representing Washington State University, Vancouver, (WSUV) filed *Application for Change of Water Right* CG2-GWC2686@1. This application requested to add a point of withdrawal Ground Water Right Certificate (GWC) 2686. This application was amended on January 16, 2013 to change the original point of withdrawal (the 1956 Darling well) to Well A (Well 1) and well DAW-1 (Well 2).

GWC 2686, issued October 23, 1956 authorizes the withdrawal of 170 gallons per minute (gpm) and 90 acre-feet (ac-ft) per year for irrigation of 45 acres and domestic supply.

Description and Purpose of Proposed Change

Table 1. Attributes of the Existing Water Right and Proposed Change

	<i>Existing</i>	<i>Proposed</i>
Name	R.J. Darling	Washington State University
Priority Date	1/31/1956	
Change Application Date		06/13/2011
Instantaneous Rate (gallons per minute, gpm)	170	50
Annual Quantity (acre-ft per year, ac-ft/yr)	90	20
Purpose(s) of Use	Domestic supply Irrigation of 45 acres	Irrigation of 31 acres
Period of Use	March 1 - October 31	Same
Place(s) of Use	All of that portion of the W ½ SE ¼ lying west of Salmon Creek AND All of the N ½ and N ½ S ½ NW ¼ SW ¼ ; AND All of that portion of the SE ¼ SW ¼ All three portions being situated south and east of the county road and north of the south line of that certain 14-foot road described in that certain deed from Elizabeth Young and husband recorded in Vol 52 of deed at page 240 and in that deed give Jacob Hurtle by J. Monroe Wood recorded in Vol 7 at page 264 recorded of said county, all being within Sec. 24 T. 3 N., R. 1 E.W.M.	Property owned by WSU comprised of parcels 181684000, 185948000, 185964000, 185983000, 185994000, 186017000, situated within the N ½, and the SW ¼, and the W ½, NW ¼ SE ¼ of Section 24, T. 3 N., R. 1 E.W.M. lying north of NE Salmon Creek Avenue, Along with the S ½ S ½ SE ¼, and the E ½ E ½ SE ¼ SW ¼, of Section 13, T. 3 N., R. 1 E.W.M.

Table 2. Proposed Sources of Withdrawal

Source Name	Parcel	Twp	Rng	Sec	QQ Q	Latitude	Longitude
Well A (Well 1)	1859480000	03N	01E	24	NE ¼ NW ¼	45.7362	-122.6334
DAW-1 (Well 2)	1859480000	03N	01E	24	NE ¼ SW ¼	45.7293	-122.6338

Table 3. Existing Source of Withdrawal

Source Name	Parcel	Twp	Rng	Sec	QQ Q	Latitude	Longitude
1956 Darling well	185948000	03N	01E	24	NE ¼ SW ¼	45.7290	-122.6321

Legal Requirements for Proposed Change

The following is a list of requirements that must be met prior to authorizing the proposed change.

Public Notice

RCW 90.03.280 requires notice of a water right application be published once a week for two consecutive weeks in a newspaper of general circulation in the county where the water is withdrawn. An original public notice for this project proposal was posted in *The Columbian*, published in Clark County on September 9 and September 20, 2012. The Department of Ecology did not receive any protests or letters of concern in response to this notice.

State Environmental Policy Act (SEPA)

A SEPA determination evaluates if a proposed withdrawal will cause significant adverse environmental impacts. A SEPA threshold determination is required for:

- 1) Surface water applications for more than 1 cubic feet per second (cfs). For agricultural irrigation, the threshold increases to 50 cfs, if the project isn't receiving public subsidies.
- 2) Groundwater applications requesting more than 2,250 gpm.
- 3) Projects with several water right applications where the combined withdrawals meet the conditions listed above.
- 4) Projects subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA).
- 5) Applications that are part of several exempt actions that collectively trigger SEPA under WAC 197-11-305.

This application does not meet any of these conditions and is categorically exempt from SEPA.

Water Resources Statutes and Case Law

RCW 90.03.380(1) states a water right put to beneficial use may be changed. The point of diversion, place of use, and purpose of use can be changed, as long as other water rights will not be harmed or injured.

The Washington Supreme Court has held that when Ecology processes an application for change to a water right, they are required to make a tentative determination. A tentative determination establishes the extent and validity of the claim or water right to verify that it is eligible for change. (*R.D. Merrill v. PCHB and Okanogan Wilderness League v. Town of Twisp.*)

Same Body of Public Groundwater

RCW 90.44.100 allows Ecology to amend a ground water permit(or claim) to allow the user to construct a replacement or additional well at a new location outside of the location of the original well, or to change the manner or place of use of the water, if:

- (a) For replacement wells, the user must discontinue use of the original well and properly decommission the original well.
- (b) For additional wells, use from the original well can continue, but the combined total withdrawal from all wells must not enlarge the right.
- (c) Other existing rights must not be impaired.
- (d) The wells must draw from the *same body of public groundwater*. Sources in the same *body of public groundwater* are:
 - Hydraulically connected.
 - Have a common recharge (catchment) area.
 - Share a common flow regime.

INVESTIGATION

The material reviewed in support of this application included the following:

- The State Ground Water Codes, administrative rules, and policies.
- Report of Examination for previous change CG2-GWC2686, approved by Ecology on December 4, 2009 and cancelled on August 2, 2012.
- Department of Ecology's Water Right Tracking System (WRTS) database.
- Topographic and local area maps.
- Declaration of Michael J. Watters dated October 19, 2008.
- Hydrogeology memo written by Tammy Hall, licensed hydrogeologist, with Water Resources Southwest Regional Office, dated February 25, 2013.

Project Location and Site Description

The WSUV campus is in southern Clark County in Water Resources Inventory Area (WRIA) 28, the Salmon Washougal. The campus is situated on the floodplain for Salmon Creek at the confluence with Mill Creek. The WSUV campus encompasses about 350 acres and first began offering courses in 1996.

Intent of Proposed Change

The intent of this *Application for Change* is to change the point of withdrawal of the original water right to two wells; Well A (Well 1) and DAW-1 (Well 2). WSUV also requests to change the place of use to allow flexibility to irrigate 31 acres anywhere in a designated 164-acre portion of the western half of Section 24, T. 3 N., R. 1 E., W.M. they want. The irrigated areas consist of small patches of landscaped areas throughout the campus.

WSU Vancouver Campus

In 1991, Washington State University (WSU) purchased roughly 350 acres of property in Clark County for the WSU Vancouver campus site. This property was originally owned by R.J. Darling and had been operated as a farm. Water use on the property was authorized by Ground Water Right Certificates (GWC) 1851 and GWC 2686.

History of Changes Made to GWC1851 and GWC2686

- **September 2004:** WSU filed *Applications for Change* CG2-GWC 1851 and CG2-GWC2686. The intent of the applications was to allow WSUV flexibility in irrigating their property by changing the place of use. In addition, WSUV also requested the following:
 - For GWC 1851, adding two new wells, Field Well and a proposed new well not yet drilled. The new well was intended to be drilled in the shallow Troutdale Gravel Aquifer (TGA), however the actual depth of the proposed well isn't specified.
 - For GWC 2686, WSU proposed to use Well A. Well A is drilled in 2006 under a Preliminary Permit. Pump testing showed Well A has a sustained rate of 50 gpm.
- **December 2009:** Ecology approved both proposed changes.
- **February 2011:** After four unsuccessful attempts to develop an irrigation well focusing on the shallow Troutdale Gravel Aquifer (TGA), PGG requested authorization from Ecology to develop water from the deeper Sand and Gravel Aquifer (SGA).
- **May, 2011:** WSUV drilled Well DAW-1 to the SGA. This well is the proposed well "yet to be drilled" authorized under the ROE for CG2-GWC1851. The well was pump tested and produced 300 gpm.
- **June 2011:** Ecology issued a temporary permit to use DAW-1 under GWC2686. WSUV filed CG2-2686@1 to add both Well A and DAW-1 to GWC 2886 since their original intent was to use a single well to irrigate property under both GWC 2686 and GWC 1851. WSU wanted to retain the option of using Well A if needed, for backup supply.
- **August 2012:** Ecology subsequently canceled CG2-GWC2686A on August 2, 2012. GWC2686 reverted to original status.
- **January 2013:** WSUV amended CG@-GWC2686@1 to change the authorized point of withdrawal from the 1956 Darling well to Wells A and DAW-1 as proposed points of withdrawal.

History of Water Use

The Darling farm consisted of a dairy operation, with irrigation, stockwater, and domestic supply. The farm's water needs were supplied by four wells, two surface water diversions, and two springs.

Based on a declaration by Michael J. Watters (2008), some surface water irrigation was occurring when WSUV purchased the property in 1991. Mr. Watters attests that he relied on a diversion from Mill Creek to irrigate 20 to 22 acres east of Mill Creek (Mill Creek field) up until 1988, and a diversion from Mill Creek to irrigate 60 acres on the field west of 50th avenue up until 1990. This irrigation likely was authorized under the surface water rights and claims associated with the property.

About 180 to 200 heifers apparently remained on the farm into 1992 and these were watered using the 1956 Darling well.

Water Rights Appurtenant to the Place of Use

Ecology's WRTS database lists 14 water rights and claims appurtenant to the Darling property. Some claims appear to be for the same uses and quantities as the certificates. The surface water certificates have lapsed into relinquishment because of non-use. The same appears to be true for all claims not associated with GWC2686 and GWC1851.

Table 4. Water rights appurtenant to the Darling property/WSUV campus.

<i>Certificate Claim -</i>	<i>Name</i>	<i>Priority date</i>	<i>Source</i>	<i>Purpose of use</i>	<i>Rate(Qi) GPM or CFS</i>	<i>Annual Quantity (Qa) ac- ft/year</i>
GWC 1851 ¹	R J Darling	1953	Field well	Irrigation of 30 acres, domestic supply	120 gpm	60
13424CL ¹	Salmon Creek Land Company	1953	Field well	Irrigation of 30 acres, domestic supply	120 gpm	
GWC2686 ²	R J Darling	1956	1956 Darling well	Irrigation of 45 acres, domestic supply	170 gpm	90
132486CL ²	Salmon Creek Land Company	1956	1956 Darling well	Irrigation of 45 acres, domestic supply	170 gpm	
136818CL	Salmon Creek Land Company	1950	Salmon Creek	Irrigation of 2 acres	130 gpm (0.29 cfs)	10
136819CL	Salmon Creek Land Company	1938	Artesian well	Irrigation of 20 acres	100 gpm	40
SWC 1760	EK Brown	1940	Mill Creek	Irrigation of 10 acres	0.1 cfs	
119948CL	EK Brown	1940	Mill Creek	Irrigation of 189.5 acres	250 gpm (0.56 cfs)	179
SWC3808	EK Brown	1950	Mill Creek	Irrigation of 20 acres	0.1 cfs	
119949CL	EK Brown	1950	Mill Creek			
S2-23004C	Salmon Creek Land Company	1974	Unnamed spring		0.03 cfs	
01141	R J Darling	1938	Unnamed spring	Irrigation and domestic supply	0.0225 cfs	

¹ Duplicate filing. Both have the same quantities, places of use, and priority dates.

² Duplicate filing. Both have the same quantities, places of use, and priority dates.

Tentative Determination

A tentative determination for the approval of CG2-GWC2886 in 2009 confirmed 20 ac-ft per year and 50 gpm were eligible for change. This is still considered to be the amount available for change under CG2-GWC2686@1. (Ecology, 2009)

Proposed Use

The proposed use under CG2-GWC2686@1 is irrigation of 31 acres within the WSUV campus.

Groundwater Development History-Previous Changes on GWC2686

A previous change was filed and approved in 2009. WSUV proposed to change the point of withdrawal from the 1956 Darling well to Well A, which had been drilled under the authority of a Preliminary Permit. The intent, at the time, was to draw water from the shallower Troutdale Gravel Aquifer (TGA). When this previous change was approved, everyone assumed that a shallow well could be used as an irrigation source.

In 2006, WSU completed Well A. Testing indicated that this well would be capable of sustained production of only about 50 gpm. In 2010, in hopes of finding more water, WSU completed three additional 8-inch supply wells near the south side of campus, also completed in the TGA (Field Wells -1 and -2 and Well B). Field Well -1 produced less than 20 gpm and was subsequently abandoned due to low well yield. Field Well -2 and Well B each produced less than 12 gpm and were both capped.

Well DAW-1 Temporary Permit

Well DAW-1 was drilled in 2011 and completed in the deeper SGA. Pump testing concluded DAW1 was capable of producing 300 gpm. WSUV requested and received a temporary authorization to use DAW-1 as a point of withdrawal under GWC2686.

Hydrologic/Hydrogeologic Evaluation

Six hydrostratigraphic units were identified during the drilling of DAW-1 (PGG, 2011). From the surface downward, these units consist of the following:

- Pleistocene Alluvial Deposits PAD
- Troutdale Gravel Aquifer (TGA)
- Confining Unit 1 (CU1)
- Troutdale Sandstone Aquifer (TSA)
- Confining Unit 2 (CU2)
- Sand and Gravel Aquifer (SGA)

Pleistocene Alluvial Deposits PAD

These deposits blanketed the upland area on either side of Salmon Creek on the WSUV property. PAD are fine-grained, consisting primarily of clay, silt, and silty sand. These deposits are thought to have originated from backwater environments as part of catastrophic flood events that occurred during the last ice age. At DAW-1, PAD is about 80 feet thick.

Troutdale Gravel Aquifer (TGA)

TGA underlies the PAD and is composed of primarily sand, gravel, and cobbles. This unit is often cemented and contains a high percentage of silt. A water table aquifer occurs within this unit which

supplies water to many of the domestic wells in the area. The TGA occurs between 80 and 108 feet bgs at DAW-1.

Confining Unit 1 (CU1)

This unit is composed of fine-grained sticky clay that is about 70 feet thick near DAW-1.

Troutdale Sandstone Aquifer (TSA)

The Troutdale Sandstone Aquifer (TSA) is composed of sand and gravel at the DAW-1 site, but often consists of sand and cemented sand at other locations. This unit is a little more than 30 feet thick at the DAW -1 site.

Confining Unit 2 (CU2)

Confining Unit 2 (CU2) consists of almost 190 feet of clay and silt.

Sand and Gravel Aquifer (SGA)

The Sand and Gravel Aquifer (SGA) is composed of fine-grained sand with silt and clay interbeds. Locally, it may contain organic material and high levels of iron and manganese.

Groundwater Flow Direction

Recharge to all aquifers is from precipitation that falls on the upland areas. Groundwater recharge in the area of the WSUV campus ranged from 15 to 20 inches a year (Snyder et. al, 1994). Groundwater movement in the shallow aquifer system is generally from the upland areas towards Salmon Creek. In the deeper flow system, groundwater moves mostly westward, discharging to the Columbia River lowlands (PGG, 2011).

Site Conditions

Wells A and DAW-1 are about 3,000 feet apart. DAW-1 is only about 1,500 feet west of the 1956 Darling well.

See Attachment -1

Well construction details for the 1956 Darling well, Well A, and DAW -1 are summarized in Table 5.

Table 5. Construction details of 1956 Darling well, Well A, and DAW-1

	1956 Darling Well ¹	Well A ²	DAW -1 ³
Well Tag	N/A	ALK126	BAA379
Date Drilled	1956	10/3/2006	7/1/2011
Well elevation (ft above mean sea level, msl)	210	210	210
Well diameter (inches, in)	12	12	6
Completed depth (ft below ground surface, bgs)	90	262	540
Elevation, ft mean sea level (msl)	120	-52	-330
Screened intervals (ft bgs)			368-373
Ft above msl	N/A	142-160	440-460 475-505 515-525
Hydrologic unit	Troutdale Gravel Aquifer	Troutdale Sandstone Aquifer	Sand and Gravel Aquifer
Static water level (ft bgs)	9.67 ft below top of casing	75	196
Date measured	1993	9/25/2006	6/22/2011
Pumping capacity (gpm)	120	50	300

¹Parametrix, 2009

²GSI, 2006

³PGG, 2011

1956 Darling Well

The 1956 Darling well, the original well authorized under GWC2686, is situated on the lower terrace area. The well was used for irrigation until about 1988 and stockwater until about 1992.

Well A

WSUV's original intent was to drill a single well to irrigate their property under both GWC2686 and GWC1851. Well A was drilled in hopes that it would be able to produce 140 gpm, the total amount authorized under both certificates.

Well A was drilled and tested under a Preliminary Permit issued March 2, 2005. Well A was completed in the TGA. The primary water-bearing zone consists of cemented sand, and sand and gravel 146 to 162 feet below ground surface (bgs). Pump testing showed the well produced a maximum of 50 gpm.

WSUV intends to use Well A as a back-up because it is the only other viable well on the site besides DAW -1. The pump has been removed.

DAW-1

DAW -1 can produce as much as 300 gpm. It was drilled to a completed depth of 525 feet bgs and screened in the SGA.

PGG (2011) anticipates total drawdown after 100 days of pumping an average of 70 gpm (for GWC 2686 and GWC 1851) to be about three feet. For short periods of time, when the well is pumped at 140 gpm, roughly four more feet of drawdown is expected to occur. Interference drawdown from remote pumping could create as much as 15 feet of decline in the future where seasonal water level fluctuations would be typically around five feet. This would result in a pumping water level almost 27 feet below current conditions, or about 223 feet bgs. (PGG, 2011)

Same Body of Public Groundwater

The WSUV wells are considered the same body of groundwater. Groundwater being tapped each well ultimately discharges to the same surface water bodies; Lake River and the Columbia River. All aquifers have the same catchment area and are recharged by precipitation and vertical leakage and, therefore, share a hydraulic connection.

Impairment Considerations

Impacts to Existing Water Users

Water right changes have greatest potential to affect wells completed in the same aquifer near the new point of withdrawal.

WAC 173-150-060 specifies that only impacts to "qualifying withdrawal facilities" fit the legal definition of impairment. This definition means wells can be affected as long they are not impaired. Qualifying withdrawal facilities are wells completed in the same aquifer as the new point of withdrawal. The well must span the aquifer's entire saturated thickness and the pump elevation must allow variation in seasonal water levels.

It is not likely withdrawals from well DAW-1 and Well A will affect area users. There are no wells completed in the SGA aquifer, the same aquifer as DAW-1. While Well A is completed in a shallower aquifer, the TSA aquifer, wells nearest to Well A appear to be completed in the TGA. Well A will only be used as backup and can only produce no more than 50 gpm for short periods of time.

Ecology's databases listed the following within about one mile from Well DAW-1:

- The nearest groundwater certificates are about 1,800 feet east of well DAW-1. Both certificates have wells around 100 feet deep and completed in the TGA, the same aquifer as the 1956 Darling well.
- 13 Water Right Certificates for groundwater use for domestic supply, municipal supply, irrigation, and stockwater.
- One ground water permit for municipal supply purposes (Clark Public Utilities).
- 156 surface and groundwater claims. Water use is for domestic supply, irrigation, stockwater, and fire suppression.
- Ecology's well log database lists 104 wells drilled in about 1 ½ miles from DAW-1. Wells range in depth from 77 to 748 feet deep. Most are less than 200 feet deep and completed in the TSA and TGA.

Impacts to Surface Water

WAC 173-528-070 closes Salmon Creek to further consumptive appropriations from Salmon Creek's confluence with Lake River to its headwaters. Instream flow rights shall be protected from impairment from changes and transfers.

The proposed change will transfer withdrawals from a shallower aquifer system to a deeper aquifer, not directly connected with Salmon Creek. However, both aquifer systems share the same recharge area, are part of a common flow system, and considered the same body of public groundwater.

DAW-1 will be used as the main source and is being proposed as a replacement for shallower wells. Well A, completed in a shallower system, is intended to be used only as back-up supply.

This change is not expected to affect surface flows in Salmon Creek. Shifting WSU's withdrawal from the shallower aquifers to deeper ones will result in fewer impacts to Salmon Creek. Impacts would be shifted to more distant regional discharge points such as the Columbia River and Lake River which are tidally influenced and not of concern for hydraulic capture.

Public Interest Considerations

Approving CG2-GWC2686@1 is not detrimental to the public interest and consistent with Chapter 90.54 RCW and WAC 173-528

Consideration of Protests and Comments

No protests were filed against this application.

RECOMMENDATIONS

Based on my investigation and conclusions, I recommend CG2-GWC2686@1 be approved for the amount listed below. Approval of this application is subject to the provisions beginning on Page 2.

Purpose of Use and Authorized Quantities

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

- 50 gpm
- 20 ac-ft, seasonal use, March 1 to October 1
- Irrigation of 31 acres

Points of Diversion

- Well A (Well 1) NE $\frac{1}{4}$ NW $\frac{1}{4}$
- DAW-1 (Well 2) NE $\frac{1}{4}$ SW $\frac{1}{4}$

Both wells in Section 24, Township 3 North, Range 1 E.W.M.

Place of Use

- As described on Page 1 of this Report of Examination.

Tammy Hall

Date

If you need this publication in an alternate format, please call Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

References Cited

Ecology, 2009, Report of Examination for CG2-GWC2686, December 4, 2009.

Groundwater Solutions, Inc (GSI), 2006, Technical memorandum regarding new irrigation well, prepared for Washington State University Vancouver campus, November 1, 2006.

McFarland, W.D., and Morgan, D.S., 1996, Description of the Ground-Water Flow System in the Portland Basin, Oregon and Washington, USGS Water Supply Paper 2470-A, 58 pp.

Parametrix, 2009, Memorandum to from Rick Malin, LHG (Parametrix) to Tom Culhane (Ecology), May 5, 2009.

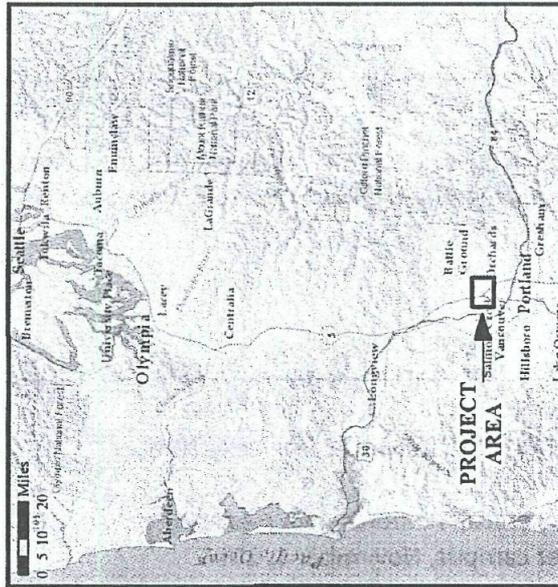
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ATTACHMENT 1

Water Right Application Number
 CG2-GWC2686@1
 Sec. 13/24 T. 03 N. R. 1E W.M.
 WRIA 28 - Clark County



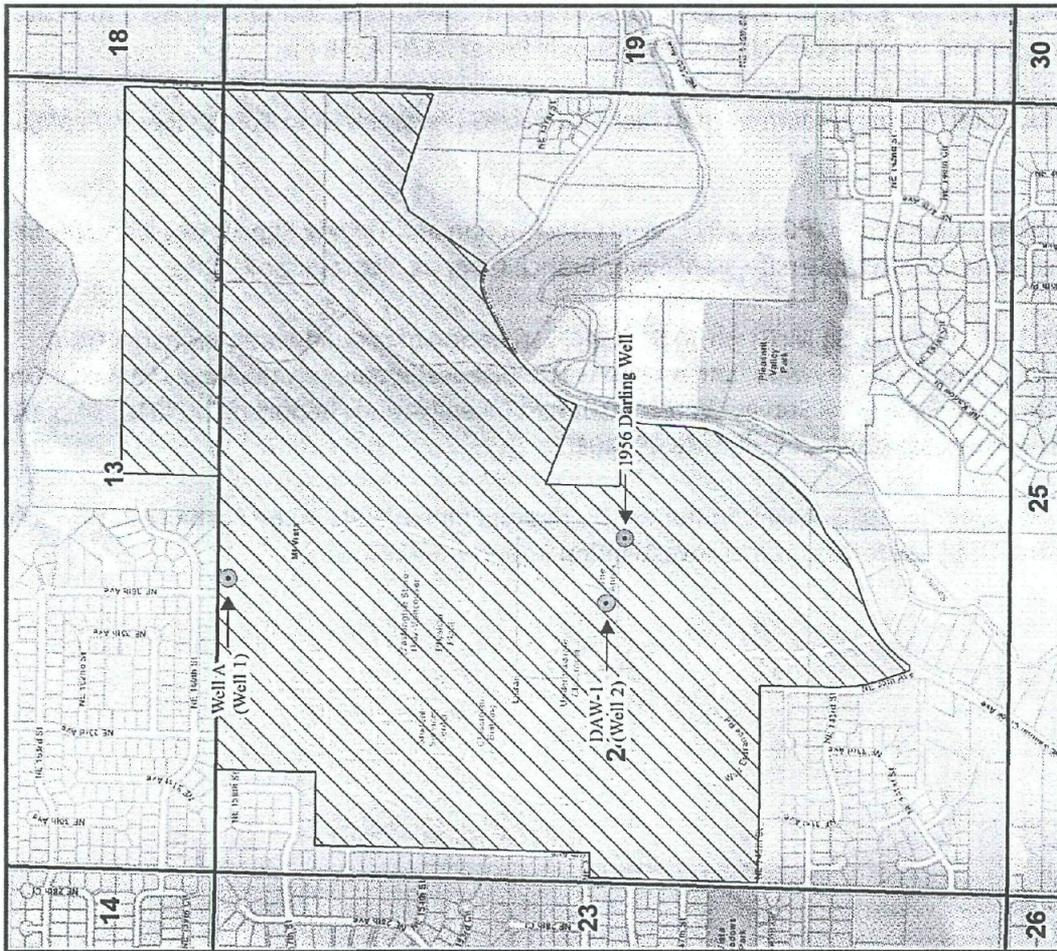
Basemap - ESRI Terrain

- Legend**
- POINT OF WITHDRAWAL (POW)
 - SECTION LINES
 - ▨ PLACE OF USE (POU)
 - HIGHWAYS
 - CLARK CO PARCELS

Comments:

The Washington State Department of Ecology does not warrant, guarantee, or make any representations regarding the use of, or results from the use of the data in terms of correctness, accuracy, reliability, or otherwise.

Map Created 1/30/2013



Basemap - ESRI World Street Map

