

State of Washington
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE 6/21/2011	WATER RIGHT NUMBER G4-35510
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MAILING ADDRESS TIMOTHY & HEATHER COLEMAN 1352 TOZER RD ELLENSBURG WA 98926	SITE ADDRESS (IF DIFFERENT) 04621/NO. 6 RD. ELLENSBURG WA 98926
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Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AC-FT/YR)
4.48	GPM	0.414

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE		ANNUAL QUANTITY (AC-FT/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	NON-ADDITIVE	
Domestic single	4.48		GPM	0.392	01/01 - 12/31
Irrigation		4.48	GPM	0.022	06/01 - 09/30

The combined instantaneous quantity from the well identified by Ecology's unique well tag # AGM644 shall not exceed 25 gpm between 4 connections.

ADDITIVE	IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
	NON-ADDITIVE		WATER SYSTEM ID	CONNECTIONS
0.011			The Crest @ Lake Cle Elum--Pending	4

Source Location

COUNTY	WATERBODY	TRIBUTARY TO				WATER RESOURCE INVENTORY AREA		
Kittitas	1 Well					39-Upper Yakima		
SOURCE FACILITY	PARCEL	WELL TAG	TWN	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
1 Well	20564	AGM644	T21N	R14E	34	NWNE	47.27382	-121.06885

Approximately 466 feet south and 1767 feet west from the northwest corner of Section 34 within the NW¼NE¼ of Section 34, Township 21 North, Range 14 E.W.M. Datum: NAD83

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS) 20564
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LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Lot 2D of BULLFROG PLATS LLC SHORT PLAT, as described and/or delineated on Kittitas County Short Plat No. SP-02-13, as recorded February 10, 2005, in Book H of Short Plats, pages 14 and 15, under Auditor's File No. 200502100045, records of Kittitas County, State of Washington; being a portion of the NE¼ of Section 34, T. 21 N., R. 14 E.W.M., in the county of Kittitas, State of Washington.

Proposed Works

The subject well was drilled in 2002 (Ecology unique well ID AGM 644) to a depth of 719 feet. A 6-inch steel casing and a 3-horsepower submersible pump are installed in the well. The delivery system includes three 119 gallon pressure tanks. The water mains exist and consist of 2-inch PVC. Water from this well will be used for this project for indoor domestic and outdoor supply. With the addition of this proposal, water from this well will be used for multiple domestic and incidental irrigation supplies totaling 4 connections. The Crest at Lake Cle Elum is a pending Group B water system with the Department of Health-(DOH). Domestic wastewater will be discharged to an individual on-site septic system, pursuant to the Declaration of Covenant signed June 2, 2011, by subject applicant.

Development Schedule		
BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	September 15, 2020	September 15, 2021

Measurement of Water Use	
How often must water use be measured?	Monthly
How often must water use data be reported to Ecology?	Annually (Jan 31)
What volume should be reported?	Total Annual Volume (ac-ft/yr)
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm)

Provisions

Wells, Well Logs and Well Construction Standards

The subject well and the right to use water from it is restricted to and authorized for the Lower Roslyn Formation (LRF).

All wells constructed in the state shall 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 shall be decommissioned.

All wells shall 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 shall remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

In accordance with WAC 173-160, wells shall not be located within certain minimum distances of potential sources of contamination. These minimum distances shall comply with local health regulations, as appropriate. In general, wells shall be located at least 100 feet from sources of contamination. Wells shall not be located within 1,000 feet of the boundary of a solid waste landfill.

Measurements, Monitoring, Metering and Reporting

Quarterly groundwater level monitoring is strongly recommended for purposes of better understanding local recharge-area characteristics. Ecology may provide technical assistance. Contact Central Regional Office, Water Resources Program, Technical Unit supervisor of hydrogeologist staff via reception at: 509-575-2491 for further details.

An approved measuring device shall 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.

Water use data shall be recorded monthly and maintained by the property owner for a minimum of five years. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to the Department of Ecology by January 31st of each calendar year.

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

WAC 173-173 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 Level Measurements

In order to maintain a sustainable supply of water and ensure that your water source is not impaired by future withdrawals, static water levels **should** be measured and recorded monthly using a consistent methodology. Static water level is defined as the water level in a well when no pumping is occurring and the water level has fully recovered from previous pumping. Static water level data should include the following elements:

Unique Well ID Number.

Measurement date and time.

Measurement method (air line, electric tape, pressure transducer, etc.).

Measurement accuracy (to nearest foot, tenth of foot, etc.).

Description of the measuring point (top of casing, sounding tube, etc.).

Measuring point elevation above or below land surface to the nearest 0.1 foot.

Land surface elevation at the well head to the nearest foot.

Static water level below measuring point to the nearest 0.1 foot.

Department of Health Requirements

Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water prior to beginning (or modifying) your project at DOH/Division of Environmental Health, 16201 E. Indiana Avenue, Suite 1500, Spokane Valley, WA 99216, (509) 329-2100.

Water Use Efficiency

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.

Proof of Appropriation

Final beneficial use calculations for each connection to the proposed "The Crest at Lake Cle Elum" water system, either independently or combined, shall be determined during the investigation at the Proof of Appropriation stage.

The water right holder shall 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 permit. 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.

Schedule and Inspections

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

General Conditions

You will pay to Ecology the sum of \$58.61, which represents a proportionate amount of the payment due and owing to the United States for storage and deliver of water under paragraph 15(a) of the Water Storage and Exchange Contract No. 09XX101700, between the bureau of Reclamation and the State of Washington Department of Ecology, Yakima Project, Washington, dated January 29, 2009¹ The consumptive use of 0.072 acre-feet from September 1 through March 31 is subject to the terms and conditions in the Water Storage and Exchange Contract No. 09XX101700.

You will record with the Kittitas County Auditor a property covenant as required under WAC 173-539A-050 that restricts or prohibits trees or shrubs over a septic drain field on Parcel No. 20564.

You will record with the Kittitas County Auditor an appropriate conveyance instrument under which the applicant obtains an interest in Trust Water Right No. S4-05259CTCL@2sb7 to offset consumptive use.

Any valid priority calls against the source Trust Water Right No. S4-05259CTCL@2sb7, based on local limitations in water availability, will result in temporary curtailment of the use of water under the permit until the priority call for water ends.

¹ "Long-Term Water Storage and Exchange Agreement between the U.S. and the State of Washington, Department of Ecology" (Contract No. 09XX101700).
http://www.ecy.wa.gov/programs/wr/cro/images/pdfs/exchangecontract_012909.pdf, accessed on August 22, 2011.

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 Application No. G4-35510, 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 Hearing 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

- Please send a copy of your appeal to:

Mark Kemner, Section Manager
 Water Resources Program
 Central Regional Office
 15 West Yakima Avenue -- Ste 200
 Yakima WA 98902-3452

Signed at Yakima, Washington, this 2 day of MARCH 2012.



 Mark Kemner, Section Manager
 Water Resources Program, CRO

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>.

BACKGROUND

Project Description

On June 21, 2011, Timothy and Heather Coleman of Ellensburg, Washington, (the applicant) filed an application with the Washington State Department of Ecology (Ecology) for a water right permit to appropriate public groundwater. The application was assigned Application No. G4-35510. The applicant requested authorization for an instantaneous withdrawal (Qi) of 75 gallons per minute (gpm) and an annual withdrawal volume (Qa) of 0.0414 acre-feet per year (ac-ft/yr) for one residence and 0.022 ac-ft/yr for 0.011 acre (500 square feet) of incidental lawn and garden irrigation. While this application requests appropriation from the proposed well for one residence, it is anticipated the same well will also be used to service 3 additional parcels (Parcel Nos. 20553, 176935, and 036935) for domestic supply and for an additional 0.03 acre (1,500 square feet).

The applicant intends to mitigate for consumptive use under the requested appropriation through the purchase of mitigation certificates from the Suncadia Water Exchange. The Suncadia Water Exchange was established by transferring Court Claim Nos. 05259 and 00626 into the Trust Water Right Program (TWRP). Consumptive loss resulting from the applicant's proposed use will be offset with Trust Water Right No. S4-05259CTCL@2sb7.

Priority Processing

This application is being priority processed because it qualified under the criteria under which an application may be processed prior to competing applications (WAC 173-152).

Description and Purpose of Proposed Application

Table 1: Application Summary

<i>Attributes</i>	<i>Summary</i>
Name	Coleman
Priority Date	6/21/2011
Instantaneous Quantity	75 gpm
Annual Quantity	0.414 ac-ft/yr
Purpose of Use	Domestic Single (DS), Irrigation (IR)
Period of Use	Year-round/Seasonal June 1-Sept 30
Place of Use	Parcel No. 20564, T. 21 N., R. 14 EW.M., Sec. 34, Kittitas County

Table 2: Proposed Source of Withdrawal

Source Name	Parcel	Well Tag	Twn	Rng	Sec	QQ Q	Latitude	Longitude
1 well	20564	AGM-644	21N	14E	34	NWNE	47.27382	-121.06885

Legal Requirements for Approval of Appropriation of Water

RCWs 90.03 and 90.44 authorize the appropriation of public water for beneficial use and describes the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.03.250 through 90.03.340 and RCW 90.44.050. In accordance with RCW 90.03.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:

- Water must be available.
- There must be no impairment of existing rights.
- The water use must be beneficial.
- The water use must not be detrimental to the public interest.

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 area where the water is to be stored, diverted and used. Notice of this application was published in the Daily Record during the weeks of August 10, August 17, and August 24, 2011. No comments or protests were received by Ecology during the 30-day comment period.

Consultation with the Department of Fish and Wildlife

The Department must give notice to the Department of Fish and Wildlife of applications to divert, withdraw or store water (RCW 77.57.020). Notice was provided on August 29, 2011 during a Water Transfer Work Group meeting at the Bureau of Reclamation in Yakima, Washington. A positive response was communicated with regard to this proposal.

State Environmental Policy Act (SEPA)

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 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.
- (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.

INVESTIGATION

Site Visit

A site visit was performed on August 16, 2011, by Candis Graff and Anna Hoselton from Ecology. Global Positioning Satellite (GPS) coordinates were taken of the location of the proposed well, along with other wells in the area and the subject of other applications within the same development of this application. A measurement of the static water level of the proposed well was not taken as it was discussed and determined that the congested nature of the shaft would risk the integrity of the equipment used to acquire such a measurement.

Other Rights Appurtenant to the Place of Use

No existing groundwater rights were found appurtenant to the proposed place of use (POU). Other ground water rights in the vicinity are summarized in Attachment 2.

Proposed Use and Basis of Water Demand

The December 2009 Water System Design Manual² (WSDM) by the Washington State Department of Health (DOH) contains guidance for establishing water demands. The suggested methods, in order of preference, include:

1. Metered water-production and use records.
2. Comparable metered water-production and use data from analogous water systems.
See WAC 246-290-221(3)(a) and Section 5.2.3
3. The criteria presented in Chapter 5.

According to the WSDM, "For new water systems with no source meter records, the design engineer can use information from analogous water systems or the information in Appendix D to estimate ADD and MDD for residential connections (WAC 246-290-221(3))."³ Analogous water systems are defined in Section 5.2.3 of the WSDM as systems with similar characteristics such as, but not limited to: demographics, housing size, lot sizes, climate, conservation practices, use restrictions, soils and landscaping, and maintenance practices. As such a reasonable level for a MDD for internal uses can be established at 350 gpd/ERU.

The MDD values are set at 350 gpd/equivalent residential unit, which is consistent with the WSDM. Under WAC 173-539A, 30% of domestic in-house use on a septic system is assumed to be consumptively use and 90% of outdoor domestic use is assumed to be consumptive.

Monthly and annual indoor totals for domestic water use at full build-out of the project were calculated based on the proposed 1 ERU, DOH's MDD, Ecology's guidance Document 1210, Determining Irrigation Efficiency and Consumptive Use, the Washington Irrigation Guide (WIG) for outdoor water use, and the assumptions found in WAC 173-539A. A crop irrigation requirement (CIR) for grass in the Cle Elum area of 18.11 inches was estimated using the WIG. Assuming that outdoor use is 90% consumptive, consistent with WAC 173-539A, and applying the WIG's CIR, the outdoor water requirement for 500 square feet (0.011 acre) of grass is 0.019 acre-feet per year. The calculated consumptive use and total calculations considered factors specified in WAC 173-539A and are summarized in **Table 3**.

² Department of Health, "Water System Design Manual," Olympia, WA, 2009, pp. 27-32, www.doh.wa.gov/ehp/dw/Publications/331-123.pdf, accessed on January 4, 2011.

³ Ibid, p. 28.

Table 3: *Estimated Total (Indoor and Outdoor) and Consumptive Use

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Total Use (acre-feet)	.033	.030	.033	.032	.033	.036	.040	.038	.036	.033	.032	.033	.414
Consumptive (acre-feet)	.010	.009	.010	.010	.010	.013	.017	.015	.013	.010	.010	.010	.137

*Quantities are rounded.

Hydrologic/Hydrogeologic Evaluation

The following hydrologic/hydrogeologic sections were prepared in a technical memorandum dated February 23, 2011 and later modified on September 6, 2011 to include the subject well for this application, by licensed hydrogeologist, Anna Hoselton and reviewed by Thomas Mackie, supervisor and licensed hydrogeologist, and seeks to address, by way of discussion, analysis, and evaluation, physical availability, and potential for impairment to existing water users.

Hydrogeologic Discussion

The primary hydrogeologic unit underlying Section 34 and general vicinity is the lowermost of the three (upper, middle, lower) members that compose the Eocene Roslyn Formation. The lower half of the LRF is composed of interbedded rhyolite flows and tuffs, tuffaceous to arkosic sandstones, conglomerates, siltstones, claystones and carbonaceous shales consisting of "thin dirty coal beds" (Walker, 1980). The upper portion of the LRF, however, lacks the rhyolite flows and carbonaceous shale interbeds, is finer grained and contains fewer conglomeratic sandstones (Wilson, 2008). Tabor, et al. (2000) noted that the LRF contains discernable crossbedding, pebble stringers, and cut and fill structures giving evidence that deposition occurred in a fluvial environment. The LRF conformably overlies the Teanaway Formation basalts and has a basal unit that is often found to be darker in color, red to red-brown, than the more commonly white to yellow to pale orange colored beds higher up in the section (Tabor et al., 2000). The LRF constitutes about 3,000 ft of the otherwise approximately 8,500 ft total thickness of the entire Roslyn Formation (Walker, 1980; Tabor, et al., 1984 and 2000). The LRF, unlike the upper Roslyn Formation (URF), has not been impacted by coal mining extraction.

Within the boundaries described above, the LRF generally dips south-southeast and strikes east-northeast reflecting an eastward bending of the southern half of the synclinal structure that forms the Roslyn Basin. Locally, mapped dip angles for the LRF range from between 15 and 30 degrees (Tabor, et al., 2000). In this area, thin alluvial sediments blanket the upper slopes of the LRF and gradually thicken in a down slope direction to where they come in contact with and interfinger with glacial drift sediments that dominate the lower slopes along the Lake's edge. Beyond the Lake's edge, the Lake bottom is composed of fine-grained lacustrine clays that overlie bedrock, including the LRF, and impede leakage from the Lake bottom (Link, 1989). Upstream of the Cle Elum Lake dam, the Lake bottom sediments were found to be approximately 25 to 45 feet thick during construction; however, thickness of the fine-grained lacustrine sediments was not determined in the vicinity of the dam itself. Link also noted that in some places erosional "windows" in the lake bottom clays had cut down into the underlying more permeable sediments and, as a result, required plugging or sealing to prevent seepage downstream of the dam.

The LRF, in the subject area, is recharged by local precipitation where the Formation outcrops at or near the land surface (diffuse infiltration) and where precipitation may enter the Formation by means of fracture systems (focused infiltration). Recharge is also assumed to enter the lower elevations of the western edge of the Formation by leakage of groundwater stored in the overlying alluvial and glacial sediments. Some small amount of recharge may enter down dipping LRF bedding along the reaches of Bear and Spring Creeks where they may flow over exposed units.

Groundwater flow within and discharge from the LRF will be influenced, in part, by the Formation's structural attitude. Additionally, secondary permeabilities will encourage preferential flow through units that have been fractured during faulting and folding. In the subject area, groundwater flow within the LRF is interpreted to generally follow a south-southeast or down dip direction. While variations in structural orientation may direct some groundwater eastward from the subject area into the Sandstone Creek basin, there are no springs identified in water right documents or on USGS topographic quads suggesting that is happening. Groundwater discharge from the LRF in the subject area is interpreted to be to area wells and to the overlying middle Roslyn Formation. It may be that Bear Creek, as suggested by its perennial characteristics, receives a small but sustaining volume of groundwater discharge from the LRF on its up-dip (north) side of the drainage, while Spring Creek with its intermittent characteristics may not receive enough groundwater discharge to sustain flows from the up-dip side of its drainage. The difference may be Bear Creek's proximity to the up dip LRF contact with the Teanaway Formation where recharge from the basalt unit may be entering the LRF.

The LRF's recharge/discharge relationship with Cle Elum Lake is, however, largely uncertain. The uncertainty occurs, in part, because while the LRF outcrops east of Cle Elum Lake as described above, LRF outcrops are missing west of the Lake. West of the Lake, however, the underlying Teanaway Formation and a small wedge of the overlying middle member of the Roslyn Formation are present (Tabor, 2000). As a result, it can be reasonably concluded that the LRF's west most boundary terminates somewhere under the lake offshore of Section 28, 33, and 34 of T. 20 N., R. 14 E.W.M. Consequently, the LRF may derive recharge from Lake bottom leakage depending on head relationships. The LRF may possibly, however, discharge to the lake bottom clays in a small area around the southeast end of Cle Elum Lake depending on the actual area exposure, structural attitude and head relationships. Additional study is needed to determine which may be occurring and what significance it may pose.

The stratigraphy of the LRF is extremely complex, so no attempt to identify and correlate every change in lithology as recorded by well drillers, on area logs, was made. However, depths to water bearing units recorded on the driller's logs of four wells (Well ID # AGM635, AGM643, AGM644, and AGM645) whose approximate locations were known and recognized to be approximately parallel to dip were given further consideration. Depths to the well's water bearing units were converted to elevations and compared. The comparison suggested the water bearing units correlate reasonably with the Formation's local dip angles and direction. Additionally, the four wells' static water levels (swls) appear to suggest a general trend of deeper groundwater levels as well depth increases, a hydrogeologic characteristic consistent with the behavior of a recharge area. Aquifer properties are expected to be anisotropic and heterogenous because of the LRF's depositional, erosional and deformational history. Transmissivities reflecting primary porosities, within the LRF, are expected to be in the low to moderate range for sandstone/shale units, while transmissivities reflecting secondary porosities are likely to be higher.

Logs for wells located within the LRF/LRF_{ext} boundaries as depicted in Figure 2 (provided upon request) and held in Ecology's well database number about 74. Of those wells, 36 appear to withdraw groundwater from the alluvial/glacial (ALV) sediment aquifer and were not considered further for purposes of this report. The remaining 38 logs appear to be for wells that withdraw water from the LRF with a few of the wells appearing to be doubly completed into both the LRF and ALV. Of the 38 LRF and LRF/ALV wells, air test method yield estimates range from less than 1 gallon per minute (gpm) to a high of 75 gpm at well AGM634. However, the majority of the LRF wells are estimated to yield in the range of 25 gpm or less and estimated yields above 25 gpm are suspected to be optimistic at best. In general, it is not expected that higher pumping rates would be sustainable under long duration pumping demands and as distance between a LRF well and the lake increases, sustainability of high pumping rate is less likely.

Some possible exceptions are the 8 and 10 inch wells operated by the Driftwood Acres Public Water System and a 6 inch 'Webber' well, estimated by the driller, to yield in the 45 to 50 gpm range. These wells are located approximately 1,200 to 2,500 feet from the Lake in the NE¼NW¼ of Section 34, T. 21 N., R. 14 E.W.M., and while they appeared to be developed into LRF units that extend below the Lake surface, the well's casings are perforated into the overlying alluvial/glacial (ALF) sediments. As a result, the yield derived solely from the LRF by these wells is uncertain.

The only example of an LRF well with test data collected by pump test methods within the LRF/LRF_{ext} boundaries was drilled for the US Forest Service. The 10 inch, 220 foot well is located in the NW¼ SE¼ of Section 28, T.21 N., R. 14 E.W.M., and approximately 1,230 feet from the lake. The log for this well contains a very limited record of an 8 hr pump test conducted at a rate of 50 gpm with a resulting 132 feet of drawdown and may represent some pumping inducement of groundwater recharge from the Lake bottom clays or through erosional features in the lake bottom clays.

Impairment Considerations

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection. A water right application may not be approved if it would:

- Interrupt or interfere with the availability of water to an adequately constructed groundwater withdrawal facility of an existing right. An adequately constructed groundwater withdrawal facility is one that (a) is constructed in compliance with well construction requirements and (b) fully penetrates the saturated zone of an aquifer or withdraws water from a reasonable and feasible pumping lift.
- Interrupt or interfere with the availability of water at the authorized point of diversion of a surface water right. A surface water right conditioned with instream flows may be impaired if a proposed use or change would cause the flow of the stream to fall to or below the instream flow more frequently or for a longer duration than was previously the case.
- Interrupt or interfere with the flow of water allocated by rule, water rights, or court decree to instream flows. Degrade the water quality of the source to the point that the water is unsuitable for beneficial use by existing users (e.g., via sea water intrusion).

Impairment, Qualifying Groundwater Withdrawal Facilities, and Well Interference

There are three concepts that are important when considering whether a withdrawal of water from a well would impair another existing water right. The concepts are defined as follows:

Impairment is an adverse impact on the physical availability of water for a beneficial use that is entitled to protection.

Qualifying ground water withdrawal facilities are defined as those wells which in the opinion of the Department are adequately constructed. An adequately constructed well is one that (a) is constructed in compliance with well construction requirements; (b) fully penetrates the saturated thickness of an aquifer or withdraws water from a reasonable and feasible pumping lift (WAC 173-150); (c) has withdrawal facilities capable of accommodating a reasonable variation in seasonal pumping water levels; and (d) the withdrawal facilities and pumping facilities are properly sized to match the ability of the aquifer to reduce water.

Well interference is the overlap of the cones of depression for two or more wells. Well interference reduces the water available to the individual wells and may occur when several wells penetrate and withdraw groundwater from the same aquifer. Each pumping well creates a drawdown cone. When several wells pump from the same aquifer, well density, aquifer characteristics, and pumping demand may result in individual drawdown cones that intersect and form a composite drawdown cone.

Proposed Well Location

If the request under the above cited application is granted, the new water right will authorize withdrawals from an existing well, identified by unique well ID #AGM644. The well is located within the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 34, T. 21 N., R. 14 E.W.M., about 60 feet south of the NE corner of Kittitas County Parcel ID 20564 on approximately the parcel's eastern boundary line on west-southwest facing slopes of the Spring Creek basin overlooking the southeastern end of Cle Elum Lake.

Discussion

The above cited request proposes to use existing well, unique ID # AGM644. Well AGM644 is located approximately 1,000 feet northwest of existing well AGM643 and about 1,500 feet southwest of existing well AGM634, both of which are constructed into and withdraw groundwater from the lower member of the Roslyn Formation sandstones/shales. Well AGM644, is likewise constructed into and withdraws groundwater from the lower member of the Roslyn Formation sandstones/shales and the same body of public groundwater as existing wells AGM643 and AGM634. Consequently, the Technical discussion of Applications: G4-35414 for Ambrose, Brian and Donna; G4-35418 for Staenberg, Jon; G4-35419 for Staenberg, Jon; and G4-35420 for Denney, John D., Jr. / Denney, Jo Ann (Hoselton, 2010) which evaluated the likely effects resulting from pumping wells in this area is applicable to and representative of the current request under application G5-35510 for Coleman. A copy of the cited report should be added to file G4-35510 for Timothy & Heather Coleman.

In summary, the proposed use from the subject well will result in similar effects as those described in the cited report: Impairment between groundwater uses is not anticipated, however, if effects on Spring Creek are an issue of concern, then additional mitigation may be necessary.

Water Availability, Planned Mitigation, and Water Duty

Water availability includes physical availability (for example, productivity of the aquifer) and legal availability (for example, closure of basins to further appropriations).

Physical Availability

For water to be physically available for appropriation there must be ground or surface water present in quantities and quality and on a sufficiently frequent basis to provide a reasonably reliable source for the requested beneficial use or uses. In addition, the following factors are considered:

- Volume of water represented by senior water rights, including federal or tribal reserved rights or claims.
- Water right claims registered under RCW 90.14.
- Ground water uses established in accordance with RCW 90.44, including those that are exempt from the requirement to obtain a permit.
- Potential riparian water rights, including non-diversionary stock water.
- Lack of data indicating water usage can also be a consideration in determining water availability, if the department cannot ascertain the extent to which existing rights are consistently utilized and cannot affirmatively find that water is available for further appropriation.

Therefore, as discussed above, groundwater appears to be physically available. Legal availability, however, is ultimately a permitting/management decision that is, in part, based on the above information

Legal Availability

To determine whether water to be legally available for appropriation, the following factors are considered:

- Regional water management plans – which may specifically close certain water bodies to further appropriation.
- Existing rights – which may already appropriate physically available water.
- Fisheries and other instream uses (e.g., recreation and navigation). Instream needs, including instream and base flows set by regulation. Water is not available for out of stream uses where further reducing the flow level of surface water would be detrimental to existing fishery resources.
- The Department may deny an application for a new appropriation in drainage where adjudicated rights exceed the average low flow supply, even if the prior rights are not presently being exercised. Water would not become available for appropriation until existing rights are relinquished for non-use by state proceedings.

WAC 173-539A withdrew from appropriation all groundwater within upper Kittitas County. Only new withdrawals of groundwater where the new appropriation is determined water budget neutral are allowed. The rule defines water budget neutral as "...an appropriation or project where withdrawals of ground water of the state are proposed in exchange for discharge of water from other water rights that are placed into the trust water right program where such discharge is at least equivalent to the amount of consumptive use."

The appropriation proposed under the subject application will be water budget neutral by dedicating 0.137 ac-ft/yr of consumptive use available from the Suncadia Exchange to mitigation purposes. Table 3 above represents the estimated monthly consumptive use for the project.

Beneficial Use

The use of water for single domestic and irrigation purposes is defined in statute as beneficial uses (RCW 90.54.020(1)).

Public Interest Considerations

When investigating a water right application, Ecology is required to consider whether the proposal is detrimental to the public interest. Ecology must consider how the proposal will affect an array of factors such as wildlife habitat, recreation, water quality, and human health. The environmental resources and other natural values associated with the area were taken into account during the consideration of this application.

Consideration of Protests and Comments

No protests were filed against this application.

Conclusions

In conclusion,

- Water is physically available at the quantities sufficient to meet project demand. When combined with the propose mitigation measures, water is legally available under the provisions of WAC 173-539A.
- RCW 90.54.020 recognizes domestic and irrigation uses as beneficial uses of water.
- Approval of the proposed appropriation will not result in impairment of existing water rights.
- Approval of the proposed appropriation is not detrimental to the public interest.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that this request for a water right 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.

- 4.48 gallons per minute.
- 0.414 acre-feet per year (0.392 for domestic and 0.022 for irrigation).
- Continuous indoor single domestic for 1 residence.
- Seasonal irrigation of up to 0.011 acre of lawn and garden from June 1 through September 30 annually.

Point of Withdrawal

One Well: (AGM644)—Approximately 466 feet south and 1767 feet east from the NW¼ corner of Section 34 with the NW¼NE¼, Section 34, Township 21 North, Range 14 E.W.M.

Place of Use

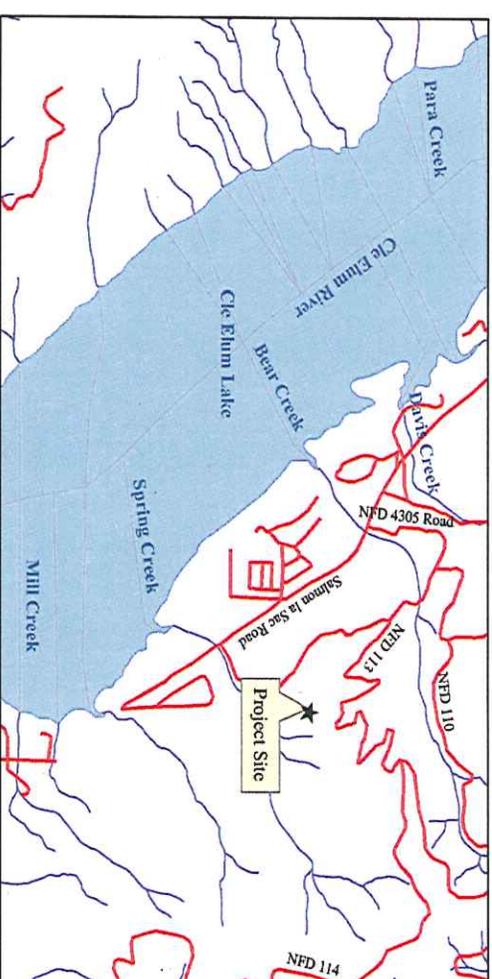
As described on Page 2 of this Report of Examination.

MARISA DOWNER for _____ *03-02-2012*
 Candis L. Graff, Water Resources Program Date

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Timothy & Heather Coleman
 Application No. G4-35510
 Sec. 34, T. 21 N., R. 14 E. W.M.
 WRIA 39 - Kittitas County

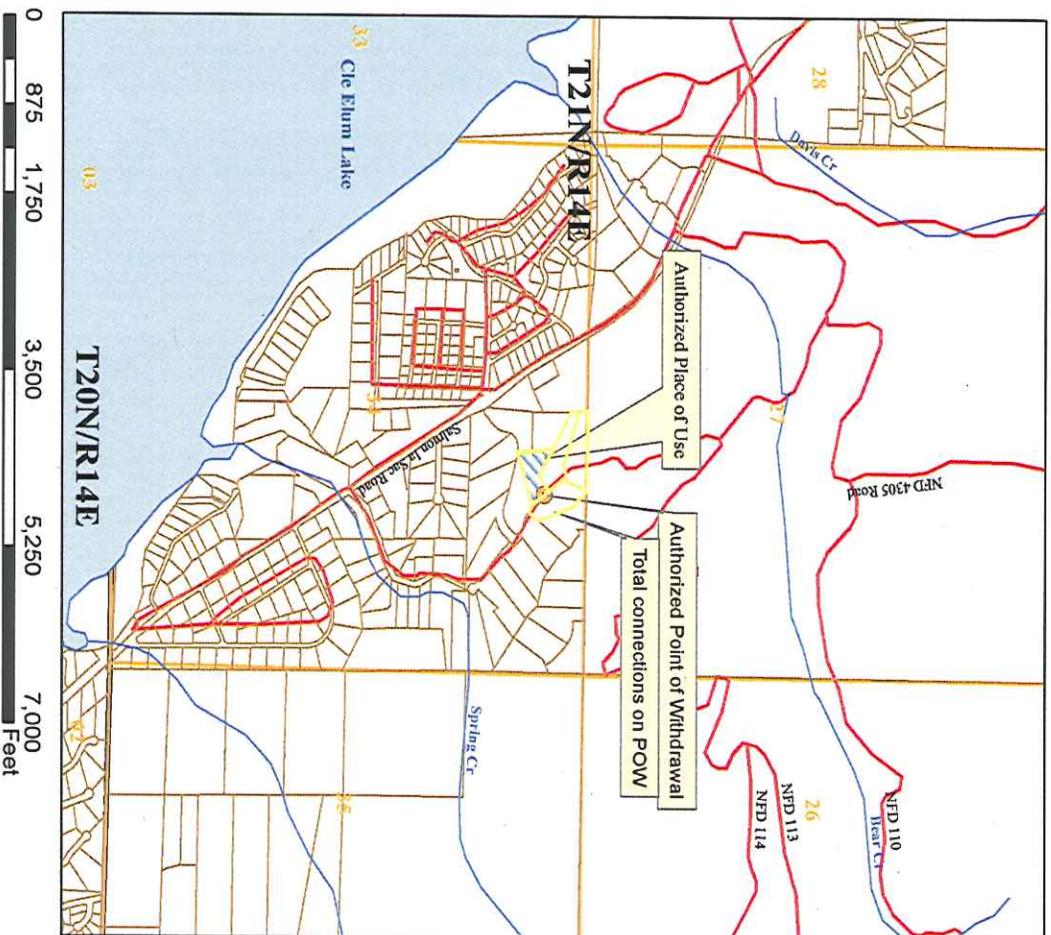


Attachment 1

Legend

- Authorized Point of Withdrawal
- Authorized Place of Use
- Lakes
- Streams
- Local Roads
- Parcels
- Sections
- Township
- Connections

Comments:
 Place of use and points of withdrawal are as defined on the cover sheet under the heading, 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'



Attachment 2

Table 4: Other Water Rights within .5-Mile Radius of POW

<i>Court Claim/ Control Number</i>	<i>Document Type</i>	<i>Authorized/Claimed Annual Quantity(Qa)</i>	<i>Purpose</i>	<i>Source</i>
G4-35414P	WBN Permit	0.414	DS, IR	Well
G4-35418P	WBN Permit	1.241	DM, IR	Well
G4-35419P	WBN Permit	0.414	DS, IR	Well
G4-35420P	WBN Permit	0.414	DS, IR	Well
G4-35459P	WBN Permit	0.435	DS, IR	Well
G4-35462P	WBN Permit	0.414	DS, IR	Well
G4-35465P	WBN Permit	0.414	DS, IR	Well
0415	Court Claim	.5	DS	Unnamed Spring
1289	Court Claim	1	IR	Spring Creek
1291	Court Claim	2	DS	Spring Creek
CG3-22462C	Change/ROE	30	MU	3 Wells
CG4-GWC4396-A	Change/ROE	2	DS	Well
G4-059811CL	Claim	1	DS	Well
G4-059812CL	Claim	1	DS	Well
G4-059813CL	Claim	1	DS	Well
G4-072947CL	Claim	2	DS/IR	Well
CG4-GWC6536-A@1	Change/ROE	60	MU	3 Wells
G4-000079CL	Claim	40	Unspecified	Well
G4-22756C	Certificate	4	CI	Well
G4-001518CL	Claim	1.5	DG/IR	Well
G4-033805CL	Claim	.75	DG	Well
G4-27075C	Certificate	2	DS	Trench

Definitions: WBN=Water Budget Neutral, DM=Domestic Multiple, DS=Domestic Single, IR=Irrigation, MU=Domestic Municipal, CI=Commercial/Industrial.

WBN Permit Nos. G4-35414, G4-35418P, G4-35419P, G4-35420, G4-35459, G4-35460, and G4-35465 authorize similar amounts for a total of 9 residents from 3 other existing wells within the same development (The Crest at Lake Cle Elum).

CG4-GWC4396-A, CG3-22462C, and CG4-GWC6536-A@1 provide water to the Driftwood Acres Water System. Each original certificate was modified to authorize combining the points of withdrawal of 3 wells through a common distribution system to provide water to the combined entire development.

Court Claim No. 0415 is authorized for single domestic supply for a recreational cabin and is used seasonally from an Unnamed Spring.

Court Claim No. 1289 is authorized for no more that ½ acre of lawn of irrigation, amounting to 1 ac-ft/yr from Spring Creek.

Court Claim No. 1291 is authorized for single domestic supply, including lawn and garden from Spring Creek.

The validity of G4-059811CL, G4-059812CL, G4-059813CL, G4-07294CL, G4-001518CL, G4-033805CL, and G4-000079CL is suspect since the reported dates of first use fall after the adoption of RCW 90.44: Regulation of Public Ground Water of 1945.

G4-22756C is owned by Boulder Creek Enterprises and attests to the withdrawal of 4 ac-ft/yr for commercial use.

G4-27075C authorizes 2 ac-ft/yr for domestic supply within Sunshine Estates.