File NR G4-35515
WR Doc ID 4923398

DEPARTMENT OF ECOLOGY
State of Washington

State of Washington
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE
8/19/2011

WATER RIGHT NUMBER
G4-35515P

MAILING ADDRESS
CLE ELUM RIDGE LOT 6A LLC
5435 298TH AVE SE
PO BOX 501
PRESTON WA 98050

SITE ADDRESS (IF DIFFERENT)

Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL RATE	UNITS	ANNUAL QUANTITY (AF/YR)
30	GPM	1.371

Purpose

	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		
PURPOSE	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	PERIOD OF USE (mm/dd)
Domestic multiple	30		GPM	1.176		01/01 - 12/31
Irrigation		30	GPM	0.195		06/01 - 09/30

REMARKS

The combined instantaneous quantity from the proposed 3 wells shall not exceed 30 gpm between 3 total residences.

IRRIGATED ACRES	
ADDITIVE	NON-ADDITIVE
0.103	

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
KITTITAS	GROUNDWATER		39-UPPER YAKIMA

SOURCE FACILITY/DEVICE	PARCELS	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
3 Proposed Wells	13531, 956853, & 956854	20N	15E	23	N½ & N½S½	N/A	N/A

Place of Use (See Attached Map)

PARCELS

13531, 956853, & 956854

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Parcel 1 (No. 13531) of that certain Survey as recorded November 8, 2010, in Book 37 of Surveys, page 75, under Auditor's File No. 2010110801057, records of Kittitas County, Washington; being a portion of Lot 6-A, of CLE ELUM HOMESTEAD LARGE LOT SUBDIVISION NO. SP 02-40 SHORT PLAT, Kittitas County Short Plat No. SP-02-40, as recorded September 29, 2003, in Book G of Short Plats, pages 107 through 109, under Auditor's File No. 200309290059, records of Kittitas County, State of Washington; and being a portion of Lot 7-A, of CLE ELUM RIDGE LARGE LOT SUBDIVISION NO. SP 03-01 SHORT PLAT, Kittitas County Short Plat pages 124 and 125, under Auditor's File No. 200310300029, records of Kittitas County, State of Washington; in the North half of Section 23, T. 20 N., R. 15 E.W.M., in the County of Kittitas, State of Washington.

AND

Parcels 2 and 3 (Nos. 956853 & 956854) of that certain Survey as recorded November 8, 2010, in Book 37 of Surveys, page 75, under Auditor's File No. 201011080057, records of Kittitas County, Washington; being a portion of Lot 6-A, of CLE ELUM HOMESTEAD LARGE LOT SUBDIVISION NO. SP-02-40 SHORT PLAT, Kittitas County Short Plat No. SP-02-40, as recorded September 29, 2003, in Book G of Short Plats, pages 107 through 109, under Auditor's File No. 200309290059, records of Kittitas County, State of Washington; being a portion of Section 23, T. 20 N., R. 15 E.W.M., in the county of Kittitas, State of Washington.

Proposed Works

Three separate, independent proposed wells located on three separate parcels.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
April 1, 2012	April 1, 2026	April 1, 2027

Measurement of Water Use

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

Provisions

Wells, Well Logs and Well Construction Standards

The proposed wells and the rights to use water from them are restricted to and authorized for the Upper Roslyn Formation (URF).

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.

Flowing wells shall be constructed and equipped with valves to ensure that the flow of water can be completely stopped when not in use. Likewise, the well shall be continuously maintained to prevent the waste of water through leaky casings, pipes, fittings, valves, or pumps—either above or below land surface.

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

In addition to the required access port, the applicant shall install and maintain, in operating condition, an airline and pressure gage. The pressure gage shall be equipped with a standard tire valve and placed in a location accessible to Department of Ecology personnel. The airline shall extend from land surface to the top of the pump bowls and the total airline length shall be reported to the Department of Ecology upon completion of the pump system.

Measurements, Monitoring, Metering and Reporting
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. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html.

Water use data shall be recorded bi-weekly and maintained by each property owner for a minimum of five years. The maximum, individual and combined rates of withdrawal and the annual individual and combined total volume for each residence 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
Because of the unique conditions existing for this area and the URF, quarterly groundwater level monitoring is highly recommended. Groundwater level monitoring data may be submitted to Ecology for technical staff review and tracking. Ecology may provide technical assistance. Contact Central Regional Office, Water Resources Program, Technical Unit Supervisor or hydrogeologist staff via reception at: 509-575-2491 for further detail.

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.

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
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
The requested volume and rate should be evenly distributed between the 3 wells as follows:

1.371 acre-feet /3 wells = 0.457 acre-feet per well
10 gallons per minute / 3 wells = 30 gallons per minute per well

Should any particular well, however, prove more reliable than another and could serve as a group water system, the water right holders may petition Ecology to assign the distributed gallons per minute and acre-feet per year to the more reliable well.

You will pay to Ecology the sum of $199.80, 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 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, 2009[1] The consumptive use of 0.239 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 Nos. 13531, 956853, & 956854.

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.

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. G4-35515, subject to existing rights and the provisions specified above.

[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.

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

Signed at Yakima, Washington, this 14 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

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):

Project Description

On August 19, 2011, Cle Elum Ridge Lot 6A LLC of Preston, 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. G4-35515. The applicant requested authorization for an instantaneous withdrawal (Qi) of 75 gallons per minute (gpm) and an annual withdrawal volume (Qa) of 1.176 acre-feet per year (ac-ft/yr) for three residences and 0.195 ac-ft/yr for 0.103 acre (4,500 square feet) of incidental lawn and garden irrigation.

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.

Attributes of Proposal

Table 1: Application Summary

Name	Cle Elum Ridge Lot 6A LLC
Priority Date	8/19/2011
Instantaneous Rate	75 gpm
Annual Quantity	1.371 ac-ft/yr
Purpose(s) of Use	Domestic Multiple (DM), Irrigation (IR)
Period of Use	Year-round/Seasonal, June 1-September 30
Place(s) of Use	Parcel Nos. 13531, 956853, & 956854, Sec. 23, T. 20 N., R. 15 E.W.M., Kittitas County

Table 2: Proposed Sources of Withdrawal or Diversion

Source Name	Parcels	WellTag	Twp	Rng	Sec	QQ Q	Latitude	Longitude
3 proposed wells	13531, 956853, & 956854	N/A	20N	15E	23	N½ & N½S½	N/A	N/A

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 county or counties where the water is to be stored, diverted and used. Notice of this application was published in the *Daily Record* of Ellensburg, Washington, during the weeks of September 10 and September 17, 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 of Ecology must give notice to the Department of Fish and Wildlife of applications to divert, withdraw, or store water (RCW 77.57.020). Notice was officially provided by Ecology on November 7, 2011 during a Yakima Water Transfer Workgroup (WTWG) meeting. A thumbs up was communicated in response 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

Proposed Use and Basis of Water Demand

The December 2009 *Water System Design Manual*[2] (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 246-290-2321(3)(a) and Section 5.2.3.
3. The criteria presented in Chapter 5.

According to the WSDM, new systems or water systems that have no source meter records, information can be obtained from analogous water systems or from information presented in Appendix D in order to estimate Average Daily Demand (ADD) and Maximum Daily Demand (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 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 the 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 ac-ft/yr. The calculated consumptive use and total calculation considered factors specified in WAC 173-539A and are summarized in **Table 3.**

Table 3: *Estimated Total and Consumptive Use

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Use (acre-feet)	.100	.090	.100	.097	.100	.129	.163	.146	.130	.100	.097	.100	**1.371**
Total Consumptive (acre-feet)	.030	.027	.030	.029	.030	.061	.093	.076	.063	.030	.029	.030	**0.528**

*Quantities are rounded.

[2] Department of Health, "*Water System Design Manual*," Olympia, WA, 2009, pp. 27-32, www.doh.wa.gov/chp/dw/Publications/331-123.pdf, accessed on September 28, 2011.
[3] Ibid. p. 28.

Other Rights Appurtenant to the Place of Use

No existing water rights were found appurtenant to the proposed place of use (POU). Water rights in the immediate vicinity are summarized as follows:

Table 4: Other Water Rights in the Vicinity (0.5 mile radius) of Sec. 23, T. 20 N., R. 15 E.W.M.

Control Number	Document Type	Purpose	Authorized Annual Quantity	Section #
G4-35331P	Mitigated Permit	DM, IR	1.044	23
G4-35309P	Mitigated Permit	DS, IR	.414	23
G4-35344P	Permit	DM, IR	6.619	23
S4-83751-J	Conditional Final Order	FR, HW, DC	10	Multiple
S4-83749-J	Conditional Final Order	FR, HW, IR, ST	105	20
CS4-02206CTCL@1	Change/ROE	FR, IR, DC, ST	105	20
CS4-02206CTCL@2	Change/ROE	FR, DC	10	Multiple
G4-35499	New Application	DS, IR	.414	22
G4-35396P	Permit	DS, IR	.414	22
G4-35287P	Mitigated Permit	DS, IR	.414	23
G4-35314P	Mitigated Permit	DS, IR	.414	23
G4-35285P	Mitigated Permit	DS, IR	.544	23
G4-35456P	Mitigated Permit	DS, IR	.414	23
G4-35314P	Mitigated Permit	DS, IR	.414	23

Definitions: WBN=WG4-35285Pater Budget Neutral, DM=Domestic Multiple, DS=Domestic Single, IR=Irrigation, DG=Domestic General, ST=Stockwater, FR=Fire Protection, HW=Highway, and DC=Dust Control.

G4-35331P, G4-35309P, G4-35344P, G4-35396P, G4-35287P, G4-35314P, G4-35285P, G4-35456P, and G4-35314P are permits that mitigate for all consumptive use, making the appropriation water-budget neutral and use water for domestic and incidental irrigation.

S4-85749-J and S4-85751-J are recently adjudicated rights in the Conditional Final Order stage and represent fire, highway, and dust control.

CS4-02206CTCL@1 and @2 are changes to court claims.

Hydrologic/Hydrogeologic Evaluation

The following hydrologic/hydrogeologic sections were prepared in a technical memorandum dated October 12, 2011, to include the subject wells 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 the subject section and identified parcels is the uppermost of three (upper, middle, lower) members that compose the Eocene Roslyn Formation. The upper member of the Roslyn Formation (URF) is composed of thick bedded, non-marine, mostly medium grained sandstones interbedded with thin siltstones, shales, carbonaceous shales and thin coal seams (Wilson, et al., 2008). The upper member constitutes only about 1,500 ft (Bressler, 1951) to possibly 2,400 ft (Walker, 1980) of the otherwise approximately 8,500 ft total thickness of the entire Roslyn Formation (Walker, 1980; Tabor, et al., 1984 and 2000).

Structurally, the subject section and parcels are located on a generally southwest dipping flank of a southeast plunging syncline (Walker, 1980) and along the northeast boundary of the now largely abandoned Roslyn coal mine workings (Figure 2). Locally, however, in the vicinity of Sections 14, 22, 23, 24, and 26, the synclinal structure displays a short segment of eastward bending as suggested by old mine workings patterns (Figure 2), by geologic structure contours (Figure 3), and by the several due south, nearly due south, and at least one slightly southeast dipping (Figure 4), bedding planes (Walker, 1980).

In the subject area, precipitation recharges the URF where the Formation outcrops at the land surface (diffuse infiltration) and where precipitation may enter the Formation via abandoned coal mine workings and fracture systems (focused infiltration). Recharge may also occur where the Formation is in contact with surface water and Formation permeabilities and head relationships facilitate. Groundwater flow within the URF will be influenced by structural dip and plunge direction. Additionally, secondary permeabilities will encourage preferential flow through the more brittle coal and shale units that are commonly fractured during formation folding. Groundwater flow from the majority of Section 23 is interpreted to generally follow a south-southeast direction with the exception of the area located west-southwest of Crystal Creek where the Formation's structural attitude suggests a more southwesterly direction. Groundwater discharge from the URF is to wells, into and out of abandoned underground coal mine workings, to streams and springs, to the mainstem valley alluvial flood plain sediments and ultimately to the Yakima River (Packard, 1981).

Area wells developed into the URF, where they encounter only primary Formation permeabilities, may be unsuccessful (dry hole) or commonly yield as little as ¼ gpm to 2-3 gpm. Well yields within the range of 5 gpm to 20 gpm, from the URF, are less common and are likely displaying higher yield related to secondary permeabilities resulting from fracturing of the Formation during folding and faulting. Where well yields are reported to be even higher and are located in the vicinity of historical mining activities, it is reasonable to suspect a well may have encountered abandoned mine workings, now filled with groundwater, and that pumping yields reflect withdrawals from an 'underground storage tank or reservoir' rather than being characteristic of the aquifer[4]. If abandoned mine workings can be ruled out, other phenomena, such as artesian flowing head, may have an explanation in geologic structure or confinement at depth.

[4] Further, standard hydrogeologic evaluation tools cannot be used and aquifer properties cannot be estimated from pumping tests on wells that are withdrawing groundwater from mine workings reservoirs. Techniques used for evaluating water sources in Karst settings may be more appropriate.

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 Ground Water 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 produce 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.

General Impairment Discussion

In the project area, wells will be drilled into the Upper Roslyn Formation (URF) and are expected to behave as described above. Wells encountering only primary permeabilities will have low to very low yields, steep drawdowns, and small areas of pumping influence reflecting the URF's generally low transmissivities. Wells encountering secondary permeabilities may have somewhat higher yields, less steep drawdown and broader areas of pumping influence initially; however, as the area of pumping influence expands, local zones of higher permeabilities may be depleted and result in declining well yields as the more common lower permeabilities are encountered. Three existing area wells, identified by Unique Well IDs BAP023, BAP013, and BAP014, appear to be good illustrations of the low to very low yield wells in this area (see attached well logs).

BAP023 is drilled to a depth of 359 feet below the ground surface (bgs). While a static water level of approximately 240 feet bgs is given on the log, yield estimates are given as zero on the day of drilling. Phone discussions with the drilling company indicate that no measureable yield was achieved on 10/09/2008, the day of drilling. However, by 10/10/2009, groundwater had seeped into the well bore and raised to a height of approximately 240 feet bgs. At the time of measurement, it was still not certain whether, at the slow seepage rate into the borehole, that the fully equilibrated static water level (swl) had been achieved (personal communication, Lance Ballough, 9/17/2010). BAP013 is drilled to a depth of 199 feet bgs and had a swl of 27 ½ feet at the completion of construction. Yield for BAP013 was estimated by air test to be approximately 3½ gallons per minute (gpm). BAP014 is drilled to a depth of 878 feet bgs and had a swl of 117½ feet bgs at the completion of construction. Yield for BAP014 was estimated by air test to be approximately ½ to ¾ gpm.

Some wells drilled in the URF may encounter groundwater storage which has accumulated within abandoned coal mine workings. In such circumstances, well yields should be considered anomalous and vulnerable to depletion if pumped excessively. Further, Packard's (1981) concerns of potential land subsidence, if the stored water is too quickly removed or too large a volume is removed for too long a time, remains valid and poses a public interest issue. Existing wells, known to have encountered the abandoned mine workings, such as the Pineloch Sun Water System located northwest of Roslyn, however, do demonstrate that groundwater may be safely withdrawn from such sources if carefully and cautiously managed.

Wells located higher on slope may be more vulnerable to declines as seasonal recharge is locally exhausted and groundwater flow progresses down gradient under natural conditions. Pumping by new wells located farther down slope may also result in increased upslope gradients. New or additional pumping of groundwater from abandoned mine workings would, likewise, result in increased upslope gradients. Over pumping from abandoned mine workings should be avoided for this and other reasons stated earlier.

Although the URF's general characteristics, geologic structure, and local mining history present some limitations and potentially unique circumstances, the proposed wells will be generally widely spaced due to large parcel size. While adding the proposed new uses to the URF will ultimately reduce groundwater levels and discharge, the amount of groundwater requested is not anticipated to result in impairment to existing rights, if authorized, because of the Upper Roslyn Formation's characteristics and the relatively wide well spacing among existing wells.

Some groundwater may discharge from the URF to springs along the northwest-southeast trending canyon walls (Greens, Curry, and Balmers Canyons), where as much as 240 feet of the Formation has been cut back (incised) by erosional processes. Only one existing short form claim, G4-130399CL, under the name of John S. Bresko, located within the NW¼ of Section 26, T. 20 N., R. 15 E.W.M., identifies a spring "groundwater" source in this area. The claim was apparently not defended in Yakima Basin's surface water Adjudication proceedings. The validity of the groundwater claim is not known. The character or type of the spring or whether the spring is still in use, likewise, is not presently known. Regardless, wells located near the canyons and in which the well casing does not extend below the canyon bottoms, may reduce discharge to local contact springs. However, it is not known if a reduction in spring flow, which may occur as a result of the proposed wells pumping, would result in physical or legal impairment without additional information not presently available.

Water Availability

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

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.

The subject request will be mitigated to offset the consumptive loss that would have otherwise supported baseflow in the mainstem Yakima River. However, local water availability from groundwater and local surface water features near the proposed points of groundwater withdrawal is less clear. Attempting to resolve the local water availability question, technical staff researched available data and Ecology internal Draft Technical Memorandum "Technical discussion regarding the recharge component of the water availability question for the Upper Roslyn Formation outcrop area, Upper Kittitas County (UKC), Washington" (September 8th, 2010) was written. Because the applicant's proposed wells will all be located within the area covered by the referenced report, more specifically within the area of PRISM (Parameter-elevation Regressions on Independent Slopes Model) average annual precipitation 1971-2000 data set grid 4259 (Figure 5), the subject request can be compared to the Memorandum's conclusions. Consequently, for purposes of this evaluation, conclusions drawn in the referenced Memorandum for PRISM grids 4259 and 4349, an approximate 5 square mile area were summed and compared to the sum of annual quantities for existing water rights, claims, and uses under the groundwater permit exemption found within the two grid cells.

Although aquifer characteristics may result in unsuccessful (dry holes) well attempts at some locations, the URF generally hosts low yield, but viable, water bearing zones that are recharged predominately by local precipitation. Assuming a small percentage of the average annual precipitation infiltrates and recharges the URF, as discussed above and in Ecology's September 8th, 2010, Technical Memorandum, groundwater is 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.
- Ecology 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.

Beneficial Use

The use of water for multiple 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.

CONCLUSION

In conclusion,

- Water is physically available at the quantities sufficient to meet project demand. When combined with the proposed 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:

- 10 gallons per minute per well for a maximum of 30 gallons per minute.
- 1.371 acre-feet per year (1.176 acre-feet per year for multiple domestic and 0.195 acre-feet for incidental irrigation).
- For continuous indoor multiple domestic for 3 residences.
- Seasonal irrigation of up to 0.103 acre of lawn and garden from June 1 through September 30 annually.

Point of Withdrawal

A portion of the N½ and a portion of the N½S½, Section 23, Township 20 N., Range 15 E.W.M.

Place of Use

As described on Page 2 of this Report of Examination.

Candis L. Graff, Water Resources Program — Date: 3-13-12

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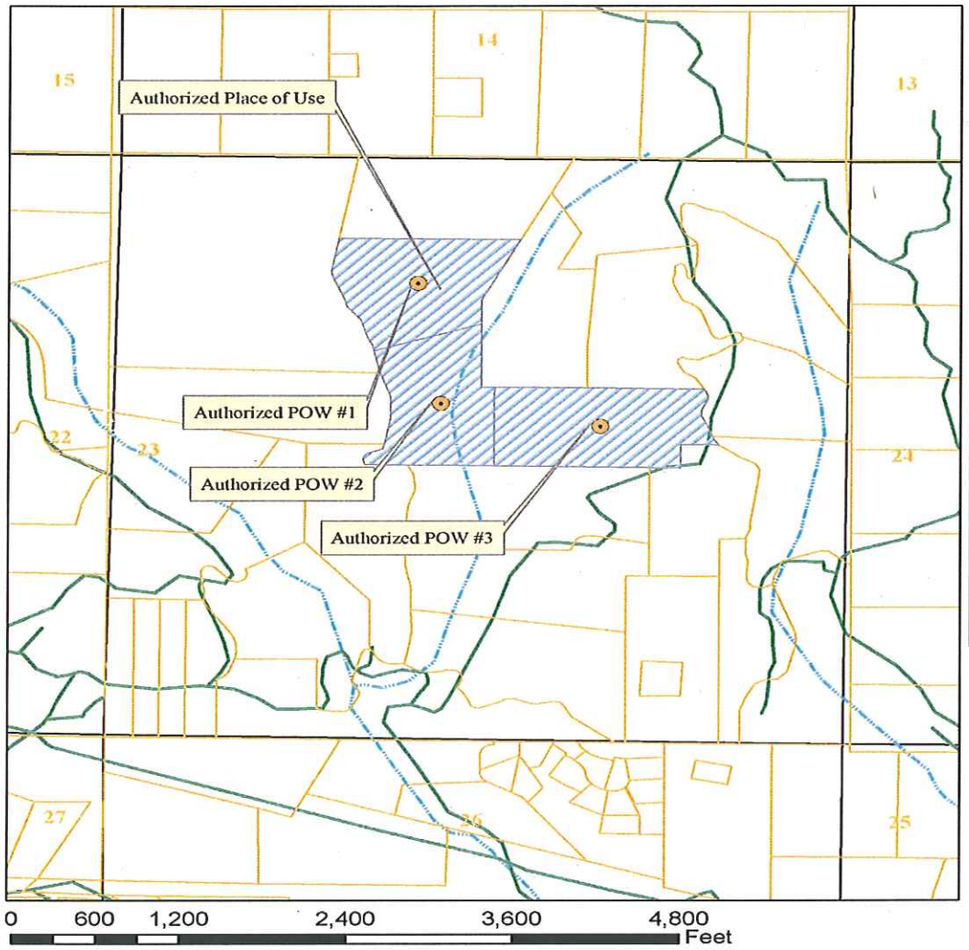
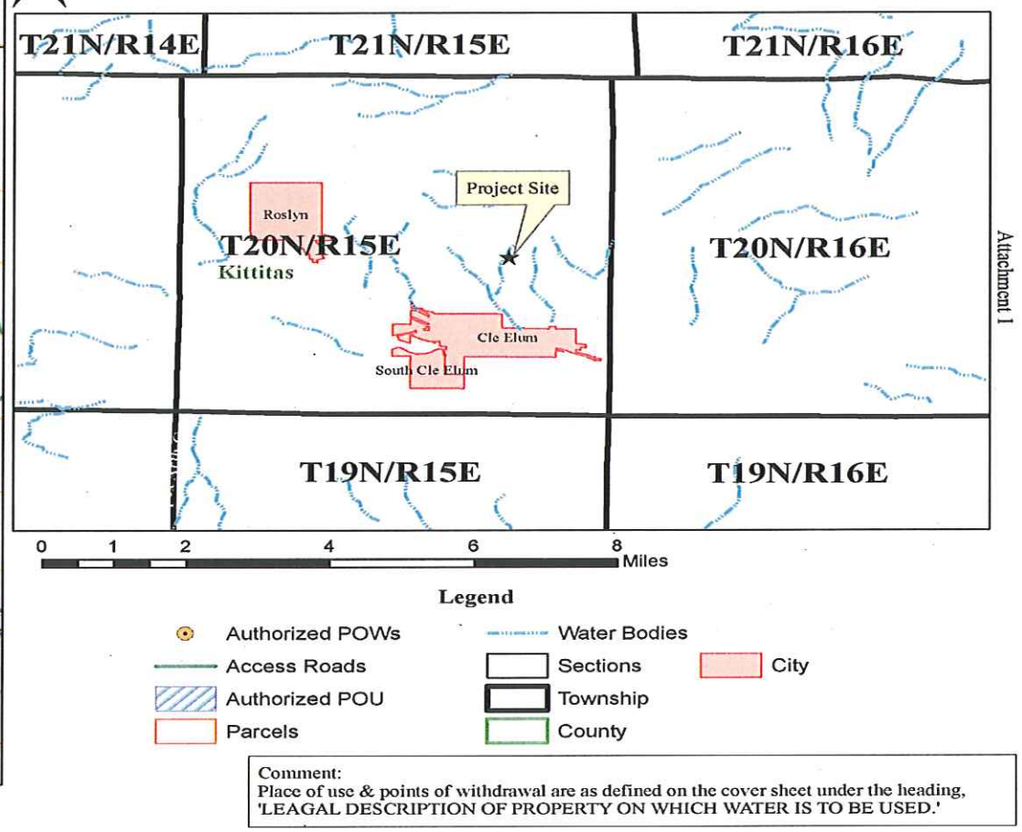


G4-35515
Cle Elum Ridge Lot 6A LLC
Sec. 23, T. 20N., R. 15 E.W.M.
WRIA 39--Kittitas County

DEPARTMENT OF ECOLOGY
State of Washington



Attachment 1

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