File No. G4-33046
WAC Doc ID: 5042503

DEPARTMENT OF ECOLOGY
State of Washington

State of Washington
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE
December 12, 2011

APPLICATION NUMBER
G4-33046

MAILING ADDRESS
Borton & Sons, Inc.
2550 Borton Road
Yakima, WA 98903-9766

Quantity Authorized for Withdrawal or Diversion

DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
200	gpm	61.1

Purpose

PURPOSE	WITHDRAWAL ADDITIVE	WITHDRAWAL NON-ADDITIVE	ANNUAL QUANTITY (AF/YR) UNITS	ANNUAL QUANTITY (AF/YR) ADDITIVE	ANNUAL QUANTITY (AF/YR) NON-ADDITIVE	PERIOD OF USE (mm/dd)
Domestic and Industrial, and 1 acre lawn irrigation	200		gpm	61.1		Continuous 04/01 to 09/15

Source Location

WATERBODY	TRIBUTARY TO	COUNTY	WATER RESOURCE INVENTORY AREA
Ellensburg Formation	Yakima River	Yakima	37

SOURCE FACILITY/DEVICE	PARCEL	TWN	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Engine Room Well,	171204-14012	12N	17E	04	SE,NE	46.56117N	-120.69365W
Two Bluffs Well	171203-22005	12N	17E	03	NW,NW	46.56209N	-120.69173W

Datum: WGS84

Place of Use (See Map, Attachment 1)

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

Property located in Yakima County, Washington, located in Sections 3 and 4, T. 12 N., R. 17 E.W.M. and in Sections 33 and 34, T. 13 N., R. 17 E.W.M described as follows: Commencing at the SW corner of Section 34, thence North 61°49'44" East 2838 feet (ft) to the True Point of Beginning; thence South 2°5'6" West 426 ft, thence South 53°11'36" West 522 ft, thence South 36°48'18" East 170 ft, thence North 53°11'36" East 385 ft, thence South 2°5'6" West 480 ft, thence North 87°14'54" West 306 ft, thence South 62°52'18" West 152 ft, thence South 0°11'6" West 120 ft, thence North 87°47'11" West 309 ft, thence South 81°9'59" West 31 ft, thence South 64°27'10" West 30 ft, thence South 50°33'27" West 7 ft, thence South 89°9'5" West 455 ft, thence South 1°56'36" West 30 ft, thence South 89°33'31" East 424 ft, thence South 0°33'54" West 1975 ft, thence

North 89°26'44" West 1289 ft, thence North 0°25'43" East 1971 ft, thence North 89°27'46" West 452 ft, thence North 2°50'26" East 1341 ft, thence South 89°54'28" East 2565 ft to the True Point of Beginning.

Also including the following property beginning at the NE corner of Section 4, T. 12 N., R. 17 E.W.M, thence South 44°26'32" East 28 ft to the True Point of Beginning; thence South 89°23'10" East 806 ft, thence South 0°0'55" West 1301 ft, thence South 89°41'54" East 508 ft, thence South 0°24'8" West 224 ft, thence South 89°54'44" West 1318 ft, thence North 0°13'20" East 1538 ft to the True Point of Beginning.

Proposed Works

The water will be produced from either or both of two wells, the Two Bluffs Well and the Engine Room Well. The Two Bluffs Well is a 6-inch diameter by 316-ft deep well on the east side of Borton Road. The Engine Room Well is an 8-inch diameter by 400-ft deep well located between industrial buildings on the west side of Borton Road. The Engine Room Well is 540-ft southwest of the Two Bluffs Well.

Each well will be equipped with a twenty-five (25) horsepower, 10-stage submersible pump capable of producing 200 gallons per minute (gpm). A Goulds AquaVar variable speed pump control system or a cycle control valve model CSV3R-2F (or equivalents) will limit the two wells to a maximum rate of 200 gpm. Production from each well will be metered at the wellhead before it is transmitted to the fruit processing plant water system through existing transmission lines or the transmission lines for domestic/office or landscape irrigation uses.

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Initiated	December 31, 2013	December 31, 2015

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
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm)

Provisions

Measurements, Monitoring, Metering and Reporting

An approved measuring device shall be installed and maintained for each of the two source wells 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. The WAC allows a water user to petition the Department of Ecology (Ecology) for modifications to some of the requirements.

Along with the submittal of metering data each year, the applicant shall provide what the non-residential population was for that year and the number of days the population resided within the place of use as described through this water right change. At the time when a proof of examination is conducted, it will be determined if this water right claim meets the definition "Municipal water supply purposes" as described in RCW 90.03.015(4).

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.

Mitigation Requirement
Use of water under this authorization requires that Claim No. G4-030317CL be held in trust as mitigation for the new use. If a future court of law finds that Ecology's tentative determination of Claim No. G4-030317CL is in error, the new use may require additional mitigation to ensure the use remains water budget neutral.

Easement and Right-of-Way
The sources and the place of use are all within property owned by the water right holder and no complications of ownership arise with regard to this water right

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
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.

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. G4-33046, subject to existing rights and the provisions specified above.

Your Right To Appeal

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

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

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

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

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 111 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 22 day of JANUARY 2013.

Mark Kemner, LHG, Section Manager
Water Resources Program/CRO

If you need this document in an alternate format, please call the Water Resources Program at 509-575-2490. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

BACKGROUND

Project Description

On December 12, 2011, Borton and Sons, Inc. (Bortons) submitted Application No. G4-33046 for a new water right to put 200 gpm and 61.1 acre-feet per year (ac-ft/yr) of water to beneficial use for the purpose of industrial supply for their fruit packing plant located on Borton Road west of the City of Yakima. The intended use also includes domestic supply for offices and other buildings on the property and for irrigation of landscaping throughout the designated place of use. The two proposed wells are in place, as is much of the required transmission system. Service is to an existing fruit packing plant facility and the associated corporate offices.

The Bortons have also submitted Change Application No. CG4-030317CL requesting to transfer their claim (No. 030317) to trust to mitigate for the proposed ground water permit discussed here. Change Application No. CG4-030317CL is addressed in a separate report. Claim No. G4-030317CL states that the Bortons have been pumping 50 gpm, 61.1 ac-ft/yr for their fruit packing plant and the surrounding area since 1943. Now the Bortons are seeking a higher rate from their existing wells during the more intense operation periods. Their overall annual would still be limited to the 61.1 ac-ft/yr described in Claim No. G4-030317CL. Issuance of new consumptive water rights in the Yakima Basin requires mitigation, based on a 1999 Memorandum of Agreement between the Yakama Nation, the Bureau of Reclamation and Ecology. Therefore using Claim No. G4-030317CL to mitigate for a new groundwater permit would make the project water budget neutral.

Table 1
Summary of Application No. G4-33046

Attributes	*Proposed*
Applicant	Borton & Sons, Inc.
Application Received	December 12, 2011
Instantaneous Quantity	200 gpm
Sources (points of withdrawal)	2 wells on property (Two Bluffs Well & Engine Room Well)
Annual Quantity	61.1 ac-ft/yr
Purpose of Use	Industrial, domestic supply and irrigation
Period of Use	Continuous
Place of Use	164.51-acre site within Sections 3 and 4, T. 12 N., R. 17 E.W.M (See Attachment 1)

Table 2: Proposed Points of Withdrawal

Source Name	Parcel	Well Tag	Township/Range/section/QQ	Diameter	depth
Two Bluffs Well	171203 - 22005	NO TAG	NW¼ of NW¼ of Section 3, T. 12 N., R. 17 E.W.M	6-inch	316
Engine room Well	171204 - 14012	AFL-770	SE¼ of NE¼ of Section 4, T. 12 N., R. 17 E.W.M	8–inch and 6-inch	400

Legal Requirements for Application Processing
The following requirements must be met prior to processing a water right application:

- **Public Notice**
  Public notice was given between March 16, 2012 and March 23, 2012. No protests or comments were received.
- **State Environmental Policy Act (SEPA)**
  This is a groundwater allocation for 200 gpm. SEPA review is not required until the allocation reaches 2,250 gpm (5.0 cubic-feet per second (cfs)). This application is exempt from SEP review.
- **Water Resources Statutes and Case Law**
  Based on the provisions of RCW 43.21A.690 and RCW 90.03.265, this application has been processed by **Robinson Noble, Inc.** under Ecology Work Assignment No. ROB004 (Master Contract No. C1000191).

INVESTIGATION

Site Description
The Borton & Sons packing facility is situated on the upland bench that forms the northern boundary of the Ahtanum Valley (Ahtanum Creek itself is more than one mile south of the facility) and the southern boundary of the smaller Cottonwood Canyon a half mile to the north. The facility is located at 2550 Borton Road and the proposed place of use is 164.51 acres. The fruit packing facility and offices are in a portion of the NE¼ of Section 4 and a portion of the NW¼ of Section 3, T. 12 N., R. 17 E.W.M. near where Borton Road turns east to become Occidental Avenue. The site has an elevation between 1,560 and 1,580 ft as compared to an elevation of 1,500 ft at the nearest point of Cottonwood Creek and 1,460 ft at the nearest point of Ahtanum Creek.

Other Water Rights
In 2010, the Bortons filed Change Application No. YAK-06-07 with the Yakima County Water Conservancy Board (the board). The Bortons requested to change the following attributes of Claim No. 030317CL: the point of withdrawal (by drilling a replacement well for the failed Pump House Well), add an existing alternate point of withdrawal, and expand the place of use. On November 30, 2010 the board issued a Record of Decision authorizing the Borton's request. On February 11, 2011, Ecology issued a modification order (Ecology File No. CG4-WRC030317) confirming the board's approval and adding provisional language.

Geologic Setting
The geologic setting is typical of the central Ahtanum Valley as described first by Foxworthy (1962) and later by Vaccaro (2009). The surface geology is mapped as Pleistocene Cemented Gravel, which overlies the Ellensburg Formation. Well logs indicate the Ellensburg Formation lies between 100 and 200 feet (ft) below land surface (elevation of 1,350 to 1,450 ft). Foxworthy maps an exposure of the contact between the Ellensburg Formation and the overlying Cemented Gravel at an elevation of 1,500 ft along the south wall of Cottonwood Canyon (at a location approximately 3,000 ft north of the subject wells). This is roughly correlative with the information provided in the well logs of the area. The wells of the upland upon which the subject property is situated are completed, for the most part, in the Ellensburg Formation though some penetrate into the Yakima Basalt Aquifer (a locally named subgroup of the Columbia River Basalt Group).

Hydrogeologic Analysis

Water of the Ellensburg Formation flows eastward to southeastward in this region to ultimately discharge as upward leakage into the Cemented Gravel, or near-surface alluvium, and then to the Yakima River. This flow pattern has been consistently described in the 1975 Ecology/Battelle numerical modeling and in the recent USGS modeling of the Ahtanum Creek area within their Yakima Basin-wide numerical model. Using elevations taken from the USGS topographic map for the area, the static water levels in the Borton & Sons and neighboring wells are at an elevation of approximately 1,350 ft. By contrast, the elevation of Ahtanum Creek 1.5 miles to the south is 1,490 ft, about 140 ft higher. The regional aquifer characteristics were estimated by Ecology research hydrogeologists as part of a technical study used to generate the 1975 Ahtanum Basin numerical groundwater model. A regional transmissivity of 11,200 gpd/ft (1,500 cubic feet per day (cu-ft/dy)) was used to define this unit at that time. Subsequent work related to the recent USGS model for the full Yakima Basin suggests a somewhat higher aquifer transmissivity (20,000 to 50,000 gpd/ft), but these values are the result of a much broader study. Test data from the Borton & Sons Engine Room Well indicate a specific capacity value of nearly 25 gpd/ft of drawdown which strongly suggests a relatively high transmissivity local to that well (50,000 gpd/ft or greater). Regional analyses accomplished as part of this investigation used a value of 20,000 gpd/ft to assess drawdown patterns and impact potential. The aquifer is confined throughout the region. The recent USGS modeling effort suggest a storage coefficient of 0.005 for this unit.

Four Statutory Tests

This Report of Examination (ROE) evaluates the application based on the information presented above. To approve the application, Ecology must issue written findings of fact and determine that each of the following four requirements of RCW 90.03.290 has been satisfied:

1. The proposed appropriation would be put to a beneficial use;
2. Water is available for appropriation;
3. The proposed appropriation would not impair existing water rights; and
4. The proposed appropriation would not be detrimental to the public welfare.

Beneficial Use

The proposed uses for the water to be allocated are all within the definitions of beneficial use as set out by the Legislature in 1969 (90.14.031(2)) and again in 1971 (90.54.020(1)) and are, therefore, considered to be beneficial uses within the context of this investigation.

Availability

The production of the water from the Ellensburg Formation beneath the subject property has been shown through the use of Claim No. 030317. The two wells identified as the points of withdrawal are each reportedly capable of production at the instantaneous rate requested (200 gpm). It is, therefore, the finding of this investigation that water is available to meet the requested allocation.

Potential for Impairment

The issue of impairment caused by the use of a new mitigated groundwater right is discussed here with regard to two groups. The first is the potential to impair neighboring groundwater rights. The second is the potential to impair the flows of regulated surface water bodies within the Ahtanum Creek Basin.

The issue of impairment of neighboring wells is one of well hydraulics and the comparison of interference drawdown predicted for the subject wells at the distance of the nearest production wells. That drawdown, compared to the available drawdown in neighboring wells and the drawdown

necessary for the potentially impaired wells to function, provide sufficient insight to define the potential for impairment. Solutions of the Theis non-equilibrium equation for the specified regional aquifer parameters were used to generate the predicted distance-drawdown relationships for two scenarios, the average annual production currently authorized and a pumping event that uses 50% of the annual allocation in one continuous 35-day pumping event at 200 gpm.

The investigation shows that the nearest well is 1,000 ft north-northeast of the nearest proposed point of withdrawal. Drawdown at that distance is theoretically defined to be approximately 4-ft, and the difference in drawdown between the 200 gpm pumping event and the currently allocated 50 gpm is about 3-ft. The neighboring well, if completed in the same aquifer (no log could be located), would be expected to have similar available drawdown as that of the source wells for this pending application and would also have a similar production potential (specific capacity of 5 to 25 gpm/ft). The implication is that there is a significantly greater available drawdown in any properly constructed neighboring well than is required to produce the allocated water for that well. The interference drawdown does not, therefore, impose sufficient stress at the neighboring well to be considered an impairment of that water right. Since wells at greater distance theoretically exhibit even less interference drawdown and the relationships are otherwise similar, it is the finding of this investigation that the mitigated allocation sought through this application will not impair neighboring water rights.

The issue of potential impairment of the regulated surface waters of the Ahtanum Basin must be addressed in the context of the offered mitigation. As mitigated, there would be no increase in the annual allocation of 61.1 ac-ft under an existing right (being offered by the applicant in trust to mitigate for the allocation sought). Since the wells for this new right would be authorized to produce at 200 gpm rather than the 50 gpm of the right being offered in trust, the potential for impairment lies in the comparison of the drawdowns imposed for the highest likely production scenario of the new right compared to the drawdown imposed by the current allocation expressed as continuous pumping at a rate of 38 gpm (61.1 ac-ft pumped evenly on a year-round basis). This relationship was determined by solving the Theis Equation using the "u" and "W(u)" values defined as regional estimates of Ellensburg Formation Aquifer characteristics. This solution first developed by C.V. Theis is explained in any of several hydrogeology textbooks including Fletcher Driscoll's Groundwater and Wells, 1986. The aquifer characteristics were first described by Clearlock, Cole, Foote, and Wallace in their 1975 groundwater model of the Ahtanum Basin and later described in the USGS Yakima Basin modeling report (SIR 2011-5155, Ely, Bachmann and Vaccarro, 2011). The drawdown patterns indicated for the two pumping scenarios analyzed converge at a distance of approximately 1.3 miles (6,750 ft). Within the one-mile radius, the drawdown from the 200 gpm 35-day scenario is greater than that of the long-term average rate. However, beyond the 1.3-mile radius, groundwater flow theory indicates that the drawdown signature will be the same result as continuous pumping of 38 gpm year-round. The effect of the higher instantaneous allocation is, therefore limited to about 1.3 mile. Beyond that distance, the drawdown patterns will remain equivalent to current responses to the existing allocation. The static water level elevation of the Ellensburg Formation beneath the site is approximately 140 ft lower than that of Ahtanum Creek at its nearest point (2 miles south). The nearest point at which the potentiometric surface of the Ellensburg Formation Aquifer could directly intercept regulated surface water is lower in the Ahtanum Valley near Wiley City, more than 2.5 miles to the southeast. There is, therefore, no likely potential for the difference in the predicted drawdown pattern to directly impair the protected streamflows of Ahtanum Creek.

The situation for the much smaller Cottonwood Creek is similar to that of Ahtanum Creek, though somewhat closer. In addition, the upper facies of the Ellensburg Formation are exposed along the lower

wall of Cottonwood Canyon whereas they are not exposed along the lower Ahtanum Creek Valley. Nonetheless, assessment of drawdown patterns for the two scenarios discussed above for Ahtanum Creek indicate that the effects on Cottonwood Creek will be essentially the same as they currently are, and no increase in impact would occur as a result of a peak production event of 200 gpm continuously for 35-days (50% of the annual allocation produced as one pumping event). The finding is, therefore, that the use of the proposed water right (mitigated by Claim No. 030317) will not result in an increase of the effects on Cottonwood Creek.

There remains the possibility that the lowering of the potentiometric surface of the Ellensburg Formation Aquifer could induce additional vertical leakage from above through the confining layer. However, this type of hydraulic phenomenon is known to be slow and to be reflected as a long-term average effect rather than a response to a specific pumping event. As such it is necessarily a function of the average annual withdrawal rate, which is not proposed to be changed (considering the mitigation offered). It is, therefore, reasonable to assert that there will be no meaningful difference in the leakage caused by the current allocation and that which would result from the new water right.

It is the finding of this investigation that the requested water right, when considered in conjunction with the offered mitigation, will not impair either existing groundwater rights or regulated surface water.

Public Welfare

The proposed use would not adversely affect surface waters or habitat related to the groundwater source. The use perpetuates industrial activities at a facility that has existed for many years and there is no substantial change in water use. The proposed increase in instantaneous quantity does not have adverse implications to the water resource or the interests of the surrounding community. The proposed use is not contrary to the public interest.

CONCLUSIONS

The conclusions based on the above investigation are as follows:

1. The proposed appropriation for 200 gpm and 61.1 ac-ft is a beneficial use of water;
2. The 61.1 ac-ft/yr is available for appropriation, and it is reasonable to expect that wells capable of 200 gpm can be maintained by the owner;
3. The new appropriation will not impair senior water rights nor will it adversely affect regulated surface water features; and
4. The new appropriation will not be detrimental to the public interest.

RECOMMENDATION

Based on the information presented above, the author recommends that the request to appropriate water be approved in the amounts described below and limited and provisioned on page 1 through 3 of this report.

Purpose of Use and Authorized Quantity

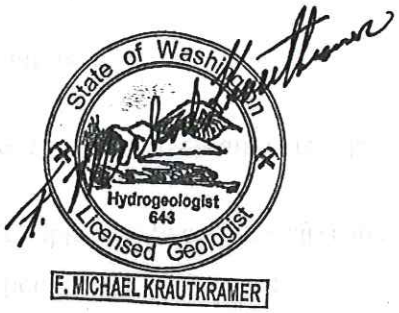
- 200 gpm, 61.1 ac-ft/yr for the purpose of continuous domestic and industrial use, and the irrigation of 1 acre of lawn from April 1 to September 15.

- Two points of withdrawal located within the SE¼NE¼ of Section 4, T. 12 N., R. 17 E.W.M. and the NW¼NW¼ of Section 3, T. 12 N., R. 17 E.W.M.
- The place of use is within Sections 3 and 4 of T. 12 N., R. 17 E.W.M. and within Sections 33 and 34 of T. 13 N., R. 17 E.W.M.

Report by: F. Michael Krautkramer — 1/16/2013

F. Michael Krautkramer
Principal Hydrogeologist, Robinson Noble, Inc.

Date

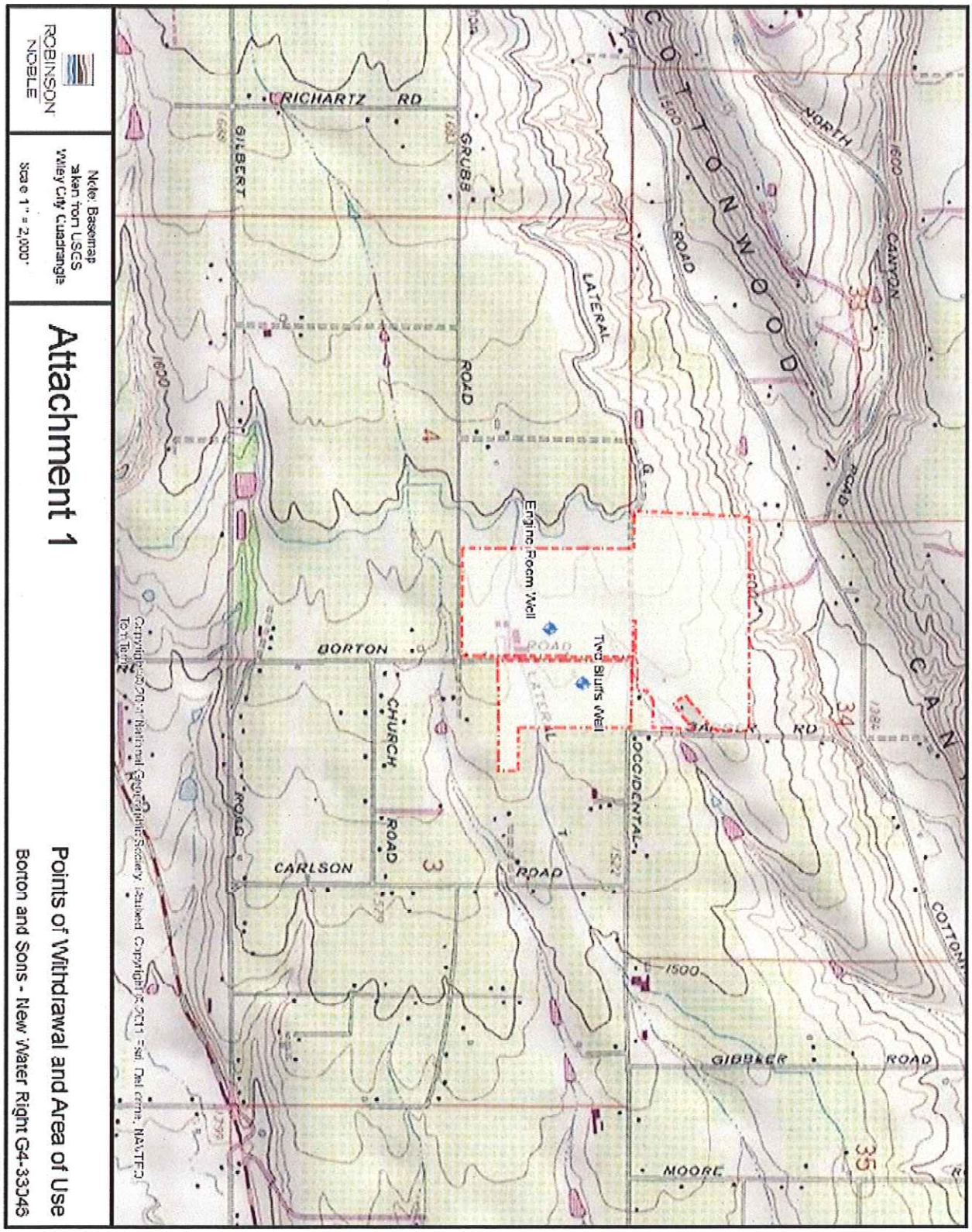


Reviewed by: Kelsey S. Collins — 1/22/13

Kelsey S. Collins, Water Resources Program

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.


ROBINSON NOBLE
Note: Basemap taken from USGS Wiley City Quadrangle
Scale 1" = 2,000'
Attachment 1
Points of Withdrawal and Area of Use
Borton and Sons - New Water Right G4-33046
RICHARTZ RD
GILBERT
GRUBB
ROAD
LATERAL
COTTONWOOD
CANYON
NORTH
ROAD
Engine Room Well
Two Bluffs Well
BORTON
CHURCH
ROAD
CARLSON
ROAD
OCCIDENTAL
RD
GIBBLER
ROAD
MOORE
1500
1600
34
35
3
4