



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

DRAFT REPORT OF EXAMINATION
To Appropriate Public Waters of the State of Washington

PRIORITY DATE	APPLICATION NO.	PERMIT NO.	CERTIFICATE NO.
July 9, 2007	S1-28506A		

NAME		
Audrey Moreland		
ADDRESS/STREET	CITY/STATE	ZIP CODE
5716 Deer Harbor Rd.	Deer Harbor, WA	98243-0102

PUBLIC WATERS TO BE APPROPRIATED

SOURCE		
Pond fed by unnamed stream and direct precipitation		
TRIBUTARY OF (IF SURFACE WATERS)		
Unnamed Stream tributary of Deer Harbor		
MAXIMUM CUBIC FEET PER SECOND (cfs)	MAXIMUM GALLONS PER MINUTE (gpm)	MAXIMUM ACRE FEET PER YEAR (ac-ft/yr)
0.004	2	0.75
TYPE OF USE, PERIOD OF USE, QUANTITIES		
Irrigation of 0.58 acres, during irrigation season, 0.75 acre-feet per year		

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL					
Pond diversion is located 1,095 ft South and 1,925 ft West from the NE corner of Sect 18					
Within Township 36 North, Range 2 West, W. M. in San Juan County, Washington.					
LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP	RANGE	WRIA	COUNTY
NW1/4 NE1/4	18	36 N	2W	2	San Juan
PARCEL NUMBER	Latitude		Longitude		
261812-017000	48.613463		122.996457		

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Attachment 1 shows the location of the authorized place of use and point of diversion.

Attachment 2 provides the legal description of the property on which water is to be used.

DESCRIPTION OF PROPOSED WORKS

Audrey Moreland has applied for a water right to appropriate water for irrigation of a garden and fruit trees. She also submitted a reservoir application for a pond to capture and store water for the irrigation. The property is located on the southwest side of Orcas Island about one-half mile south-southeast of the town of Deer Harbor. The water source is an intermittent unnamed stream that flows into Deer Harbor.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
July 15, 2011	September 15, 2015	December 30, 2020

PROVISIONS

- An approved measuring device shall be installed and maintained in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173.
 - Water use data shall be recorded annually and maintained by the property owner for a minimum of five years, and shall be promptly submitted to the Department of Ecology upon request.
 - WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".
 - Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.
- A certificate of water right will issue for only that quantity of water that has been diverted and applied to actual beneficial use. Such quantity applied to actual beneficial use shall not exceed the quantity specified in this report of exam and will be calculated based on the best information available to Ecology, including metering data and/or water duty analysis.
- 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.
- A certificate of water right will not be issued until a final investigation is made

FINDINGS OF FACT AND ORDER

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 sources in question, the purpose of use is beneficial, there will be no impairment of existing rights, and there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. S1-28506, subject to existing rights and the provisions listed above.

You have a right to appeal this action to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this document. 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 this document:

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

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

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

Please also send a copy of your appeal to:

Jacqueline Klug
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue WA 98008

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>.

Signed at Bellevue, Washington, this _____ day of _____, 2010.

Jacqueline Klug
Section Manager
Northwest Regional Office
Water Resources Program

INVESTIGATOR'S REPORT

BACKGROUND

Description and Purpose of the Project

On July 9, 2007, Audrey Moreland submitted a water right application for appropriation of waters for irrigation of a garden and fruit trees. A separate reservoir application (R1-28508) was received for a pond to capture and store water for the irrigation. The pond and the irrigation applications are being processed concurrently.

The water source is an intermittent unnamed stream beginning in a pond at the top of the hill to the east and draining north, then southwest, then south to cross the Moreland property. The creek passes through two wetlands (upstream of Moreland's property) on the National Wetlands Inventory before draining into Deer Harbor.

Legal Requirements for Application Processing

Chapter 90.03 RCW authorizes 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.

The following legal requirements must be met prior to processing a water right application:

- **Public Notice**
Public notice of the application was published in *The Islands' Sounder* on August 1 and August 8, 2007. There were no written protests during the statutory 30-day protest period.
- **State Environmental Policy Act (SEPA)**
The subject water right application is categorically exempt under SEPA WAC 197-11-305 and WAC 197-11-800(4) because the instantaneous quantity is less than the one cubic foot per second threshold.

INVESTIGATION

In considering this application, my investigation included, but was not limited to, research and/or review of:

- Information supplied with the water right application
- Aerial photos from the San Juan County Tax Assessors Web site
- The USGS Shaw Island 7.5 minute topographic map
- Orr, L.A., Bauer, H.H. and Wayenberg, J.A. 2002, Estimates of Ground-Water Recharge from Precipitation to Glacial-Deposit and Bedrock Aquifers on Lopez, San Juan, Orcas, and Shaw Islands, San Juan County, Washington, U.S. Geological Survey Water-Resources Investigations Report 02-4114, 114 pages.
- Russell, R.H. ed., 1975, Geology and Water Resources of the San Juan Islands, San Juan County, Washington, Washington Department of Ecology Water Supply Bulletin No 46, 171 pages.
- Washington State University, (1985 and 1992): State of Washington Irrigation Guide
- A database search for water rights on the same source of supply
- Water well reports for Orcas Island
- Notes and GPS data from my site visit on September 1, 2010

Geographic Setting of the Place of Use and Point of Diversion

The Moreland property encompasses approximately 1.5 acres of land located on the southwestern quadrant of the western half of Orcas Island about one-half mile south-southeast of the town of Deer Harbor (Attachment 1). Hills to the east and north are heavily forested and rounded due to glaciations, and the valleys have been cleared as pasture. Poorly drained swamps and/or peat-bogs may be found in the depressions carved out of the solid rock by the glaciers. Elevations range from sea level to less than 200 feet above sea level. A network of wetlands and surface water ponds occur in the valley to the northeast of the property.

Mean annual precipitation in the area is from 28 to less than 30 inches per year. Recharge to the ground water system on Orcas Island occurs from percolation of precipitation. Recharge in the valley to the northeast of the Moreland property is less than 5 inches per year (USGS, 2002). Once infiltrated, ground water on the island generally flows radially from the center of the island towards the coastline.

The bedrock geology in the vicinity of the Moreland property consists of the Turtleback terrane, a Paleozoic arc-plutonic and volcanic unit. Water Supply Bulletin No. 46 mapped the Turtleback Complex consisting of gabbro, diorite, and quartz diorite with minor pyroxenite and serpentine.

Site Visit

On September 1, 2010, I visited the Moreland property. I looked at the creek, the proposed point of diversion, and the area to be irrigated. Audrey Moreland provided me a copy of the engineering plans for the pond and I observed the area where the pond will be constructed.

Irrigation System Details

The Moreland irrigation system will divert water from an in-stream pond with a submersible 2 gpm pump placed in the pond near the south end. The pump will divert water through a totalizing water meter to a buried holding tank next to the pond. A distribution pump will send water through one-inch irrigation lines to valve boxes with hose bibs for drip irrigation connections. There will be a six-inch fire suppression stand pipe attached to the holding tank.

A total of 0.58 acre will be irrigated to include a garden and fruit trees. The garden will be 0.2 acre and fruit trees will occupy 0.38 acre consisting of apple, pear, peach and plum trees.

Database Search of Other Water Rights on the Same Source of Supply

A Water Rights Tracking System (WRTS) search and a Geographical Information System (GIS) search were conducted to determine if other water rights exist within the same hydrologic drainage basin of the planned point of diversion for the pond. A total of twelve water right documents were found of which three are water right certificates and nine are claims (locations shown in Figure 1 and attributes in Table 1 below). Claims are designated with a CL at the end of the claim number. A water right claim is a statement of the beneficial use of water that occurred prior to the adoption of the water right codes and is not authorized by a state-issued permit or certificate. The Department of Ecology cannot verify the validity of these claims, as water right claims can only be confirmed in an adjudication by the Washington State Superior Court. Many claims represent use under the ground water exemption (RCW 90.44.050) for single domestic use.

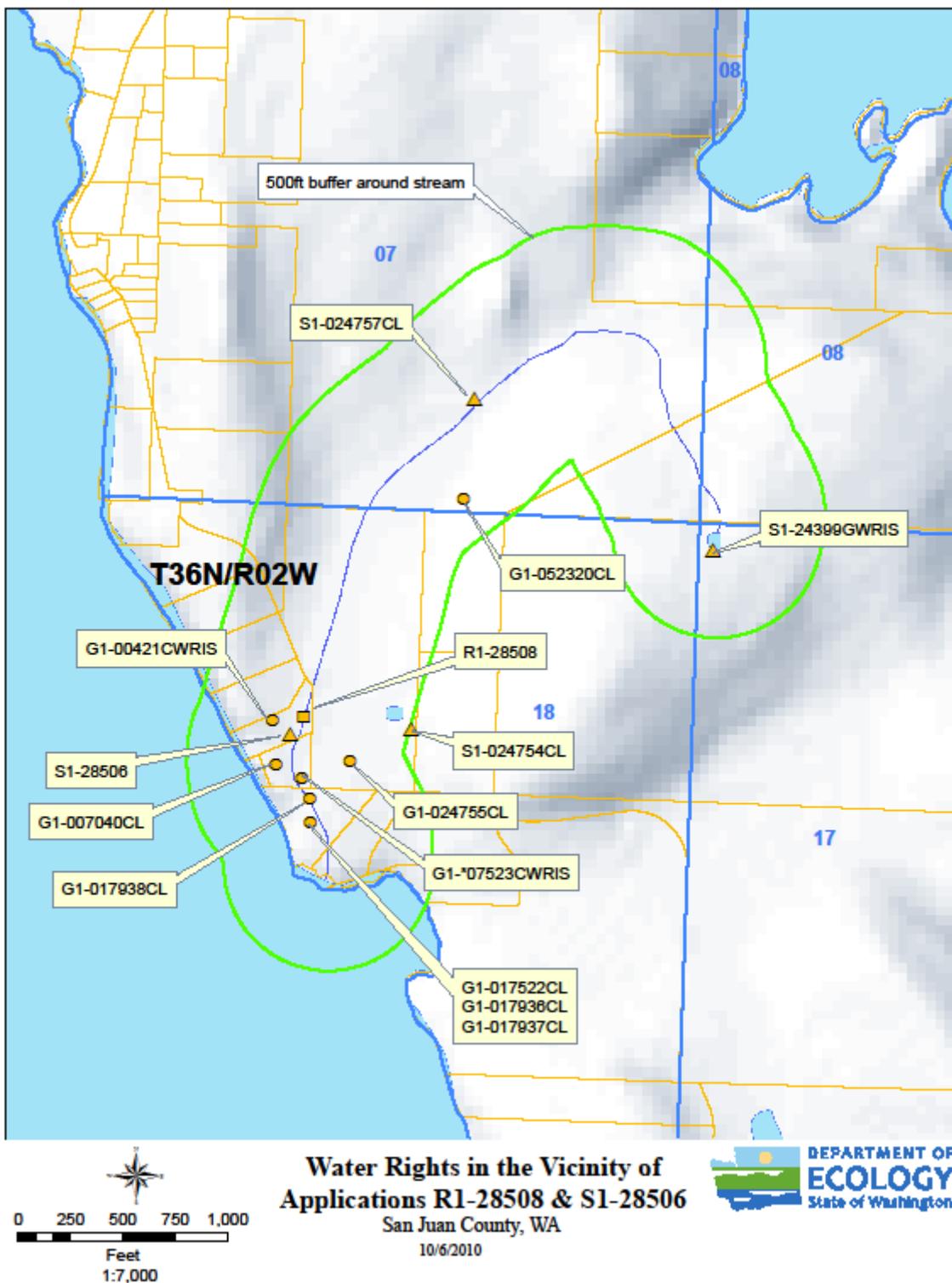


Figure 1 Water rights in same hydrologic drainage basin as applicant's diversion

Table 1 Existing Water Rights in the drainage basin of Water Right Application S1-28506						
Certificate #	Priority Date	Name	Qi	Qa (afy)	Purpose of Use	Location
G1-00421C	06/24/1965	Marjorie Ann Howland	5 gpm	2.0	DS	NW¼ NE¼ S. 18
G1-*07523C	03/10/1965	E. F. Coffman	5 gpm	1.0	DS	NW¼ NE¼ S. 18
S1-24399C	10/31/1983	Four Winds Inc.	0.022 cfs	3.16	DM, IR, ST	NW¼ NW¼ S. 17
Claim #						
G1-007040CL	1959	Charlette B. Brechemin	4 gpm	1.0	DS	NW¼ NE¼ S. 18
G1-017522CL	July 1959	Henry C. Isaacson	10 gpm	2.0	DS	SW¼ NE¼ S. 18
G1-017936CL	April 1964	Martha L. Isaacson	5 gpm	1.0	DS	SW¼ NE¼ S. 18
G1-017937CL	1930	Martha L. Isaacson	5 gpm	1.0	DS	SW¼ NE¼ S. 18
G1-017938CL	July 1967	Martha L. Isaacson	5 gpm	1.0	DS	SW¼ NE¼ S. 18
G1-024755CL	1920	Norton M. Clapp	2 gpm	3.2	DG	NW¼ NE¼ S. 18
G1-052320CL	1930	Norton M. Clapp	3 gpm	4.8	DG	SE¼ SE¼ S. 07
S1-024754CL	1930	Norton M. Clapp	1 gpm	1.0	IR	NW¼ NE¼ S. 18
S1-024757CL	1957	Norton M. Clapp	4 gpm	3.2	IR	SE¼ SE¼ S. 07

DS=Single Domestic, DG & DM=Multiple Domestic, IR=Irrigation, ST=Stock Watering, afy = acre-feet per year

A query of Ecology's Well Log database showed 27 well logs on file within a half mile radius of the diversion location. Most of the wells in this section are completed in bedrock. Most of the wells are used for permit-exempt purposes as allowed under RCW 90.44.050.

FINDINGS

Under state law the following four criteria must be met for an application 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

Water Availability

There are no regulatory closures or restrictions affecting water availability on Orcas Island, therefore I find water is legally available for this appropriation. The instantaneous quantity of 0.004 cfs is physically available for appropriation from the pond.

The annual quantity of water for appropriation was calculated using Crop Irrigation Requirement (CIR) data from the State of Washington Irrigation Guide (WAIG) 1985 and 1992. A CIR of (16.43 inches for fruit trees), and (7.94 inches for garden vegetables) was based on the Olga rain gage on Orcas Island. This gave inches of irrigation water needed above average rainfall for each crop observed for this location. However the CIR formula does not take into account the loss in conveyance from seepage, evaporation and surface runoff. Consequently, Irrigation Efficiency percentages were used from Ecology Water Resources Guidance 1210. Drip irrigation planned for fruit trees efficiency estimates average 88%. Adjusting the Crop Irrigation Requirements (CIR) by the efficiencies for each irrigation method, the Total Irrigation Requirement (TIR) for the 0.58 acres of crops is approximately 0.75 acre-feet per year. The formula used to account for this is:

$$TIR = \# \text{ acres} \times CIR / CONV / EFF\%$$

Where: $TIR = \text{total irrigation requirement in acre-feet per year}$

$\# \text{ acres} = \text{area irrigated in acres}$

$CIR = \text{crop irrigation requirement needed above precipitation}$

$CONV = \text{conversion factor to change units (12 inches to feet)}$

$EFF\% = \text{application efficiency of irrigation system}$

0.38 acre of fruit trees using trickle/drip:

$$TIR = (0.38 \text{ acres fruit trees}) (16.43 \text{ inches}) / (12 \text{ in/ft}) / (88\%) = 0.60 \text{ acre feet}$$

0.20 acre of vegetable garden using trickle/drip:

$$TIR = (0.20 \text{ acre vegetables}) (7.94 \text{ inches}) / (12 \text{ in/ft}) / (88\%) = 0.15 \text{ acre feet}$$

Total Irrigation Requirement for all crops: $0.60 + 0.15 = 0.75$ acre-feet per year.

Impairment Considerations

The surface water certificate, S1-24399C, and surface water claim, S1-024757CL, are located upstream of the proposed Moreland pond on the same intermittent stream. Therefore it is impossible for the Moreland irrigation to impair these water rights. There are no surface water rights downstream of the Moreland property. The only water rights that are downstream of the Moreland pond location are five ground water claims and one ground water certificate, G1-*07523C. None of these will be impaired by the Moreland pond since they are ground water that may possibly be enhanced by infiltration of water into the ground from the pond. Likewise, there will be no impairment to ground water right G1-00421C which is on property to the north adjacent to the Moreland property.

Steve Boessow, Department of Fish and Wildlife, has no objection to this application because there are no fish listed on the stream and the pond and irrigation will not likely add significantly to the existing impacts of

development and landscape changes. The property is right on the Sound and the creek is small and dry much of the time.

Beneficial Use

Irrigation is considered to be beneficial under RCW 90.54.020(1).

Public Interest Considerations

No potential for detriment to the public interest could be identified during the investigation of this application.

Consideration of Protests and Comments

No protests were filed against this application.

RECOMMENDATIONS

Based on the above investigation and findings, I recommend the request for a surface water permit be approved in the quantities and within the limitations listed below and subject to the provisions on page 2.

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:

- 0.004 cfs (2 gpm)
- 0.75 acre-feet per year for irrigation

Point of Diversion

NW¼ NE¼, Section 18, Township 36 North, Range 2 West, W.M.

Place of Use

As described and as shown in Attachments 1 and 2.

CONCLUSIONS

In accordance with chapter 90.03 RCW, I conclude there is water available from the source in question, the purpose of use is beneficial, there will be no impairment of existing rights, and there will be no detriment to the public interest.

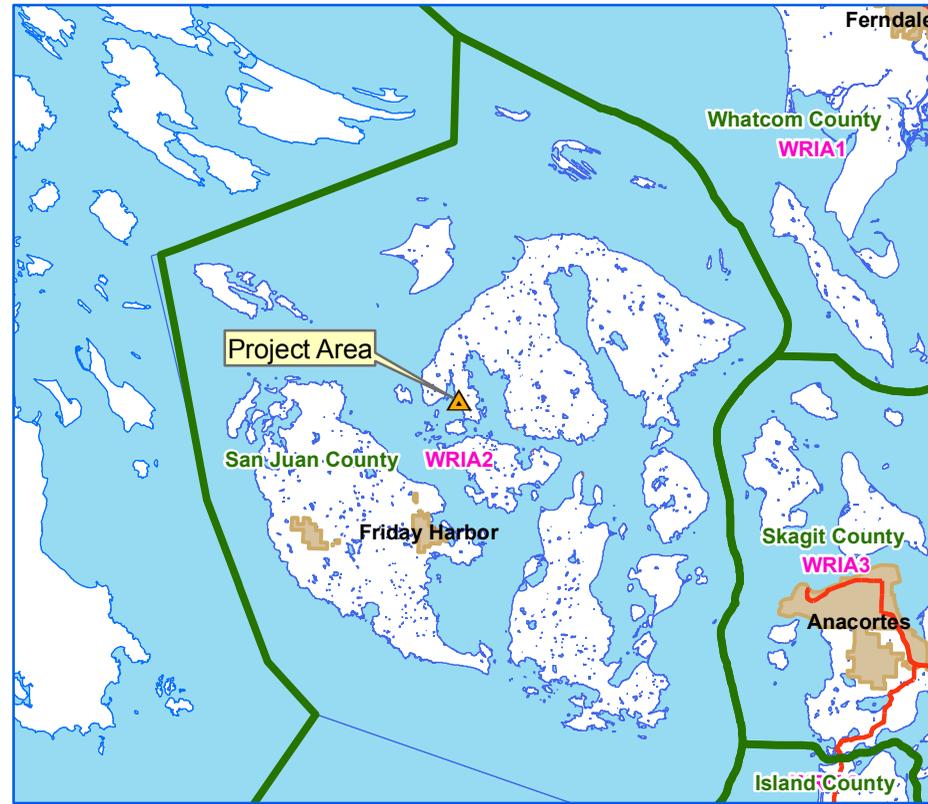
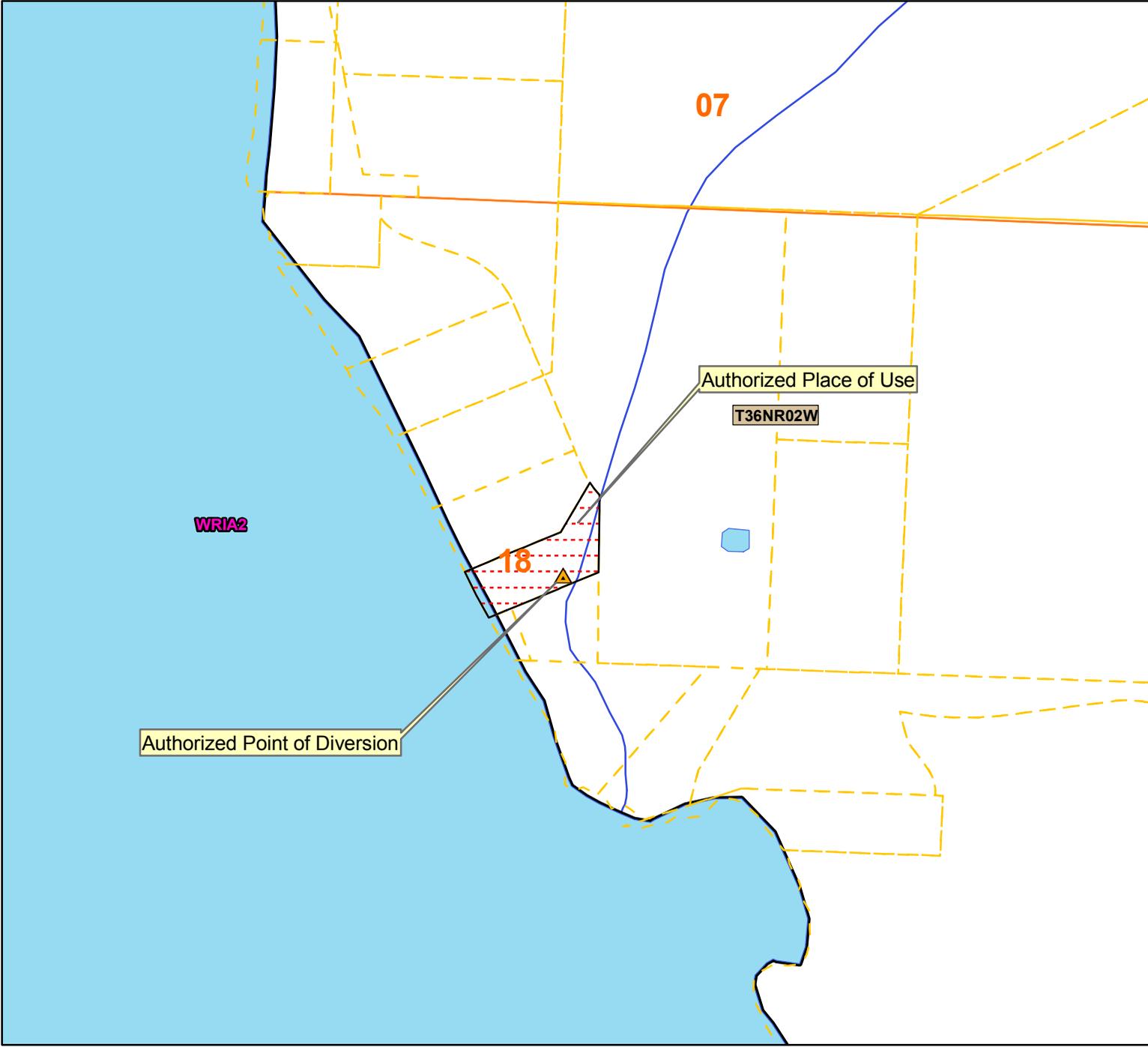
Report by: _____, 2010
Jerry L. Lyszak, LG, LHG Date
Water Resources Program

Licensed Geologist/Hydrogeologist No. 834

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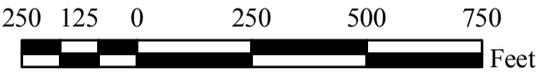
Audrey Moreland
 Water Right Number S1-28506
 Sec.18, T 36N, R 02W W.M.
 WRIA 2 - San Juan County



Legend

- County
- WRIA
- Highways
- Townships
- cities
- Sections
- Authorized Point of Diversion
- Authorized Place of Use

Place of use and point(s) of diversion/withdrawal are as defined on the cover sheet under the headings, 'LOCATION OF DIVERSION/WITHDRAWAL' and 'LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED.'



Attachment 1

Attachment 2

Legal Description for Moreland

PARCEL "A"

A part of Government Lot 2, Section 18, Township 36N, Range 2 West, W.M., Described as follows:

Beginning at the iron pipe in the east line of the County Road at a point which is 1,067 feet South and 2,109 feet West of the Section corner common to Sections 7, 8, 17 and 18 of the said Township and Range running thence North 64.38' 10" East, 125 feet to a concrete monument; thence South 2521' 50" East, 150 feet to an iron pipe; thence 64.38' 10" West 125 feet to an iron pipe in the East line of the County Road and on in the same direction 70 feet, more or less, to the line of ordinary high tide; thence with said line Northwesterly to a point which is South 64.38' 10" West from the point of beginning; thence North 64.38' 10" East, 70 feet, more or less, to the point of beginning.

EXCEPTING THEREFROM County Road No. 16 (Formerly WA Bratton Road) as consented to the establishment and wavier of all claims and damages by Quit Claim Deed, recorded June 8, 1900 in Volume 16 of Deeds at page 41, records of San Juan County.

Situate in San Juan County Washington.

PARCEL "B"

That portion of Government Lot 2, of Section 18, Township 36 North, Range 2 West, W.M., described as follows:

Tate Certain Tract 6B as shown, described, located and monumented by that certain Record of Survey recorded November 19, 1999 in Book 16 of Surveys at Page 56 under Auditor's File No. 19991117024 in the office of the Auditor of San Juan County, Washington.

EXCEPTING THEREFROM that portion conveyed to the County of San Juan, State of Washington, for use of the public forever, as a public road and highway by Quit Claim Deed, recorded August 13, 2001, Auditor's File no. 20010813019, records of San Juan County, Washington.

Situate in San Juan County Washington.