File NR CG2-28063
WR Doc ID 4644029

State of Washington

DRAFT

REPORT OF EXAMINATION FOR WATER RIGHT CHANGE CG2-28063

Added or Changed Point of Withdrawal/Diversion

PRIORITY DATE	WATER RIGHT NUMBER
March 6, 1991	CG2-28063

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
WASHINGTON WATER SERVICE P.O. BOX 336 GIG HARBOR WA 98335	

Total Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
250	GPM	120 non-additive

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

Purpose

PURPOSE	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		PERIOD OF USE (mm/dd)
	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	
Municipal	250		GPM		120	01/01 - 12/31

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
		76880	

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
Seacliff Well 6 (S06)	9500050220	AAE-035	22N	02E	28	NE NW	47.361086	-122.559954
S16	0222332030	BAT-403	22N	02E	33	NENW	47.355464	-122.561636

Datum: NAD83/WGS84

Place of Use (See Attached Map)

PARCELS (NOT LISTED FOR SERVICE AREAS)

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

Proposed Works

S06: 6 inches in diameter and 496 feet deep.
S16: 8 inches in diameter and 379 feet deep.
Both wells screened in the Qc aquifer

Development Schedule		
BEGIN PROJECT	**COMPLETE PROJECT**	**PUT WATER TO FULL USE**
Completed	Completed	In Full Use

Measurement of Water Use	
How often must water use be measured?	Weekly
How often must water use data be reported to Ecology?	Upon Request by Ecology
What volume should be reported?	Total Annual Volume
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm or cfs)

Provisions

Measurements, Monitoring, Metering and Reporting
An approved measuring device must be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173, which describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements.

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

Chloride Monitoring
In January of each year, submit the following information in writing to Ecology's Southwest Regional Office:

April and September measurements from both S06 and S16 of:

- Chloride and conductivity chemical analysis performed by a state-accredited laboratory.
- Depth to static water level with pump off long enough to allow water levels to stabilize.

The water sampling and the static water level measurement must occur at the same time.

This data will help determine if actions are necessary to prevent increasing trends in chloride concentrations that indicate seawater intrusion. Preventative actions may include reducing instantaneous pumping rate or reducing annual quantity pumped. Other actions such pumping only during low tides, raising the pump intake, or limiting the number of service connections may also be recommended.

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 at Southwest

Drinking Water Operations, 243 Israel Road S.E., PO Box 47823, Tumwater, WA 98504-7823, (360) 236-3030.

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

Proof of Appropriation
The water right holder must file the notice of Proof of Appropriation of water (under which the superseding certificate of water right will be 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 superseding 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.

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 this change to Water Right Certificate No. G2-28063, subject to existing rights and the provisions specified above.

Signed at Olympia, Washington, this day of 2011.

Michael J. Gallagher, Section Manager

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov. To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

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
Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903	**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	**Department of Ecology** Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503

INVESTIGATOR'S REPORT
Tammy Hall, Department of Ecology
Water Right Control Number CG2-28063

BACKGROUND

Description and Purpose of Proposed Change

On August 7, 2009, Michael Ireland, representing Washington Water Services, filed an *Application for Change of Water Right* to add Sea Cliff Estates Well #14 (S16) as a second point of withdrawal under Groundwater Permit G2-28063.

Groundwater Permit G2-28063 authorizes withdrawal of 250 gallons per minute (gpm) and 120 acre-feet (ac-ft) per year, non-additive for multiple domestic supply from Well #6 (S06).

See Attachment #1

Attributes of the Existing Water Right and Proposed Change

Table 1. Attributes of Groundwater Permit G2-28063 and proposed change.

Attributes	Existing	Proposed
Name	Washington Water Service	Same
Priority Date	03/06/1991	
Change Application Date		08/10/2009
Source	Sea Cliff Well #6 (S06)	Sea Cliff Well #6 (S06) Lower Sea Cliff Well #4 (S16)
Instantaneous Quantity	250 gpm	Same
Annual Quantity	120 ac-ft/yr, non-additive	Same
Purpose of Use	Multiple Domestic	Municipal
Period of Use	Continuous use	Same
Place of Use	Area served by Harbor Water Company in Sections 4, and 5, T 21 N, R 2EWM, and Sections 16, 17, 20, 21, 28, 29, 32, and 33, T 22N R 2 EWM.	The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

Table 2. Proposed Sources of Withdrawal.

Source Name	Parcel	WellTag	Twn	Rng	Sec	QQ Q	Latitude	Longitude
Sea Cliff Well 6 (S06)	9500050220	AAE-035	22N	02 E	28	NE NW	47.361086	-122.559954
S16	0222332030	BAT-403	22N	02E	33	SE NW	47.355464	-122.561636

Table 3. Existing Source of Withdrawal.

Source Name	Parcel	WellTag	Twn	Rng	Sec	QQ Q	Latitude	Longitude
Sea Cliff Well 6 (S06)	9500050220	AAE-035	22N	02 E	28	NE NW	47.361086	-122.559954

Legal Requirements for Proposed Change

The following is a list of requirements that must be met prior to authorizing the proposed change in Groundwater Permit G2-28063.

Public Notice

An original public notice for this project proposal was posted in *The Peninsula Gateway* a weekly newspaper in Gig Harbor, Pierce County on April 20 and April 27, 2011. Because of an error in the public notice, the application was reposted from August 10 to August 17, 2011. The Department of Ecology did not receive any protests or letters of concern in response to either public notice.

State Environmental Policy Act (SEPA)

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

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

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

Water Resources Statutes and Case Law

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

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

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

INVESTIGATION

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

- The State Surface Water Codes, administrative rules, and policies.
- Department of Ecology's Water Right Tracking System (WRTS) database.
- Topographic and local area maps.
- Telephone interviews and e-mail correspondence from Mike Ireland of Washington Water Services.
- Notes from a site visit on August 23, 2011.
- Technical Memorandum dated September 29, 2011 by Tammy Hall, Licensed Hydrogeologist, with Ecology's Water Resources Program at the Southwest Regional Office.

History of Water Use

The Permit for G2-28063 was issued on April 9, 1993 and authorized 250 gpm and 120 ac-ft (non-additive) from Sea Cliff Well 6 (S06).

Metering data from S06 (AAE-035) shows a decline in annual production from 61.8 ac-ft in 2004 to 16.1 ac-ft in 2010. Although it can produce 150 gpm for short periods of time, the sustained pumping rate has been limited to 100 gpm because of sand production. These problems have not allowed WWS to fully perfect the permit associated with G2-28063.

Proposed Use

The original purpose of use listed for G2-28063 is "Multiple Domestic Supply." However, since Washington Water Service is a municipal water purveyor as defined by RCW 90.03.015(3) & (4), this water right is considered municipal as a matter of law.

The proposed new well, S16 is part of a well field that also contains SO2 and SO3. Wellfield production under GWC G2-24775 for S16, SO2, and SO3 is limited to 195 gpm. Adding S16 as a second point of withdrawal under Permit G2-28063 will increase pumping capacity of the wellfield so that WWS will be able to meet instantaneous needs during peak use.

Status of Water Right

The permit for G2-28063 is in good standing. Ecology has extended the date for WWS to submit their *Proof of Appropriation* four times since the permit was issued. The most recent extension will expire on June 1, 2014.

WWS's intent through G2-28063 is to provide a reliable water supply to customers in their service area. WWS exercised due diligence but sand issues limited production of Sea Cliff Well 6 (S06) to 100 gpm. Therefore, WWS has been unable to fully-perfect the amount authorized by the permit.

Other Rights Appurtenant to the Place of Use

WWS operates the Sea Cliff Water Estates System (System Id. No. 76880) serving residential and commercial customers along the western shores of the Gig Harbor Peninsula, between the cities of Gig Harbor and Olalla. Withdrawals are authorized by 14 water right certificates and permits from14 wells. Details of water right certificates and permits held by WWS for the Sea Cliff Estates Water System are summarized in Attachment #2.

See Attachment #2.

Hydrologic/Hydrogeologic Evaluation

The Gig Harbor Peninsula is in northwestern Pierce County, at the southern end of the Puget Lowland, in WRIA 15 (Kitsap Basin). The Gig Harbor Peninsula is connected to the larger Kitsap Peninsula.

The Gig Harbor Peninsula is part of a glacial drift plain formed by at least six glaciations occurring over the last 2 million years (Kahle, 1998). The subsurface consists of a sequence of unconsolidated deposits with a thickness ranging from 1,200 and 2,000 feet (Jones, 1996). Miocene volcanic and sedimentary bedrock underlies the glacial deposits (Garling et al., 1965).

Garling et al. (1965) describes a typical glacial sequence on the Gig Harbor Peninsula as consisting of the following units, listed from youngest (top) to oldest (bottom):

- Recessional outwash: a discontinuous mantle of sand and gravel overlying the till, often found on hilltops.
- Till: normally a gray to bluish-gray compact and unsorted mixture of cobbles and pebbles in a binder of sandy silt and clay.
- Advance outwash: primarily consists of gravels and coarse sands capped by the overlying till.

Hydrostratigrapic Units

Groundwater on the Gig Harbor Peninsula is primarily produced from three aquifers, referred to as the Vashon, Sea Level and Deep Aquifers. The aquifers and hydrostratigraphic units are outlined below after EMCON (1992) and Borden and Troost (2001):

- Vashon advance outwash (Qva). The Qva is the highest producing aquifer of all Vashon-age deposits. Water levels in the Qva mimic surface topography. Perched zones exist where lenses of sand and gravel are situated between less permeable materials. Cross-sections developed by

EMCON (1992) suggest that the Qva is continuous across much of the Gig Harbor Peninsula, with the exception Wollochet Bay and Gig Harbor where the land surface is deeply incised.

- Interglacial deposits, Kitsap Formation (Qf). The Qf is a fine-grained sand to clay deposit that underlies the Vashon-age deposits. The Qf behaves as a confining unit and retards groundwater flow. The Qf can be as thick as 100 feet in some areas or thin to non-existent in other areas. The Qf is found at elevations of approximately 200 feet above mean sea level (msl) to 100 feet below msl. The Qf is exposed in bluffs that overlook Puget Sound and in stream drainages.

- Sea Level Aquifer (Qc): The Qc is present throughout the Gig Harbor Peninsula and characterized by a low elevation potentiometric surface (up to 135 feet above msl). The Qc is exposed primarily at the base of cliffs that overlook Puget Sound or in the lower reach of streams, before the stream discharges to marine water.

The peninsula is drained by several small streams that discharge directly to marine water. Annual precipitation on the Gig Harbor Peninsula ranges from 40 to 52 inches/year (in/yr) (Golder, 2002). Precipitation on the Peninsula infiltrates into the ground, runs off to streams, or is lost to evapo-transpiration. Between 13% (Drost, 1982) and 18% (Golder, 2004) of precipitation is available for groundwater recharge, after groundwater contribution to baseflow.

Horizontal flow direction of groundwater within aquifers is generally from areas of higher head to areas of lower head. Drost (1982) cites a generally downward component to groundwater flow on the Peninsula, with groundwater generally flowing toward marine water bodies and surface drainage channels.

Hydrologic Analysis

Both SO4 and S16 are situated at about 340 feet above mean sea level (msl) near the top of bluffs looking westward over Colvos Passage. The wells are situated about 2,000 feet apart and draw water from the same body of public groundwater. Details of both SO4 and S16 are summarized in Table 4.

A potentiometric surface map produced by EMCON (1992), suggests that water in the Qc near the S06 and S16 well flows eastward toward Colvos Passage.

Table 4. Well details of SO4 and S16.

	S06	S16
Well Tag	AAE035	BAT403
Date Drilled	03/23/1994	08/02/2007
Well head elevation (ft above mean sea level, msl)	340	340
Well diameter (inches, in)	6	8
Completed depth (ft below ground surface, bgs)	496	379
Screened intervals (ft bgs)	489 to495	341 to 378
Ft r below msl	149 to 135	1 to 40
Hydrologic unit	Qc	Qc
Static water level (ft bgs),	348	241.5

ft above or below msl	-8	+99.5
Date measured	03/22/1994	08/02/2007
Pumping capacity (gpm)	150	131

Impairment Considerations

Impacts to area water users

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

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

Impairment from adding S16 to G2-28063 is not expected. Ecology's databases list five certificates and one permit issued to WWS within about one mile of S16. These certificates are part of WWS's portfolio of water rights that serve customers on the Gig Harbor Peninsula. The nearest well is about 350 feet away from S16 and will likely experience some interference drawdown. Most of WWS's wells are completed in the Qc, the same aquifer as S16.

Two other certificates, listed below in Table 5, are situated between S06 and S16. Because these wells are about ¾ mile away and completed in a shallower aquifer, they should not be impacted from pumping S16.

Table 6. Water Right Certificates and Permits in ¾ mile from S16.

Certificate	*Name*	*Purpose of use*	*gpm*	*ac-ft/yr*
G2-26763	Talmo Inc.	Domestic Supply	40	4.5
G2-*10934CWRIS	Anderson SEL et al	Domestic Supply	80	8

Ecology's databases also identified the following surface water certificates, water right claims and well reports in about one mile of S16:

- Thirteen surface water certificates listing Crescent Creek and unnamed springs as sources.
- Seventy-six surface and groundwater claims. The exact location of these claims is not known.
- Eighty well reports are on file.

Impacts to surface water

Approving this change will not impair surface water. S16 is about 1,500 feet from Colvos Passage and intercepts water that would otherwise discharge to Puget Sound. Regulated surface water in WRIA 15 will not be impacted by withdrawals from SO 16.

Public Interest Considerations

Adding S16 to G2-28065 is not detrimental to the public interest and consistent with WAC 173-528 and RCW 90.54.

The change will not cause new impacts to regulated surface water or groundwater.

Consideration of Protests and Comments

No protests were filed against this application.

Conclusions

Based on the above investigation and conclusions, I recommend the request to change GWC G2-28065 be approved in the amounts and within the limits listed below, subject to provisions beginning 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:

- 250 gpm from S06 and S16.
- 120 ac-ft per year (non-additive)
- Municipal supply.

Point of Withdrawal

S06: SE ¼ SW ¼, Section 28
S16: SE ¼ NW ¼, Section 33
Township22 North, Range 2 E.W.M.

Place of Use

As described on Page 1 of this Report of Examination.

Report Writer *Date*

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

References:

Borden, R.K. and Troost, K.G. 2001. Late Pleistocene Stratigraphy in the South-Central Puget Lowland, Pierce County, Washington. Washington Division of Geology and Earth Resources Report of Investigations 33, Washington State Department of Natural Resources.

Drost, B. W. 1982. Water Resources of the Gig Harbor Peninsula and Adjacent Areas, Washington, U.S. Geological Survey.

Department of Ecology Memorandum dated July 27, 2011, written by Tammy Hall, licensed hydrogeologist with Water Resources Southwest Regional Office.

EMCON. 1992. Gig Harbor Peninsula Ground Water Management Plan Task 5 Hydrogeologic Evaluation Report.

Garling, M. E., Dee Molenaar, and et al. 1965. Water Resources and Geology of the Kitsap Peninsula and Certain Adjacent Islands, State of Washington, Department of Conservation, Washington Division of Water Resources.

Golder Associates Inc. 2002. Phase II Level 1 Data Compilation and Preliminary Assessment Report. Redmond, Washington.

Golder Associates Inc. 2003. Kitsap Watershed Planning (WRIA 15) Water Quality Technical Assessment. Redmond, Washington.

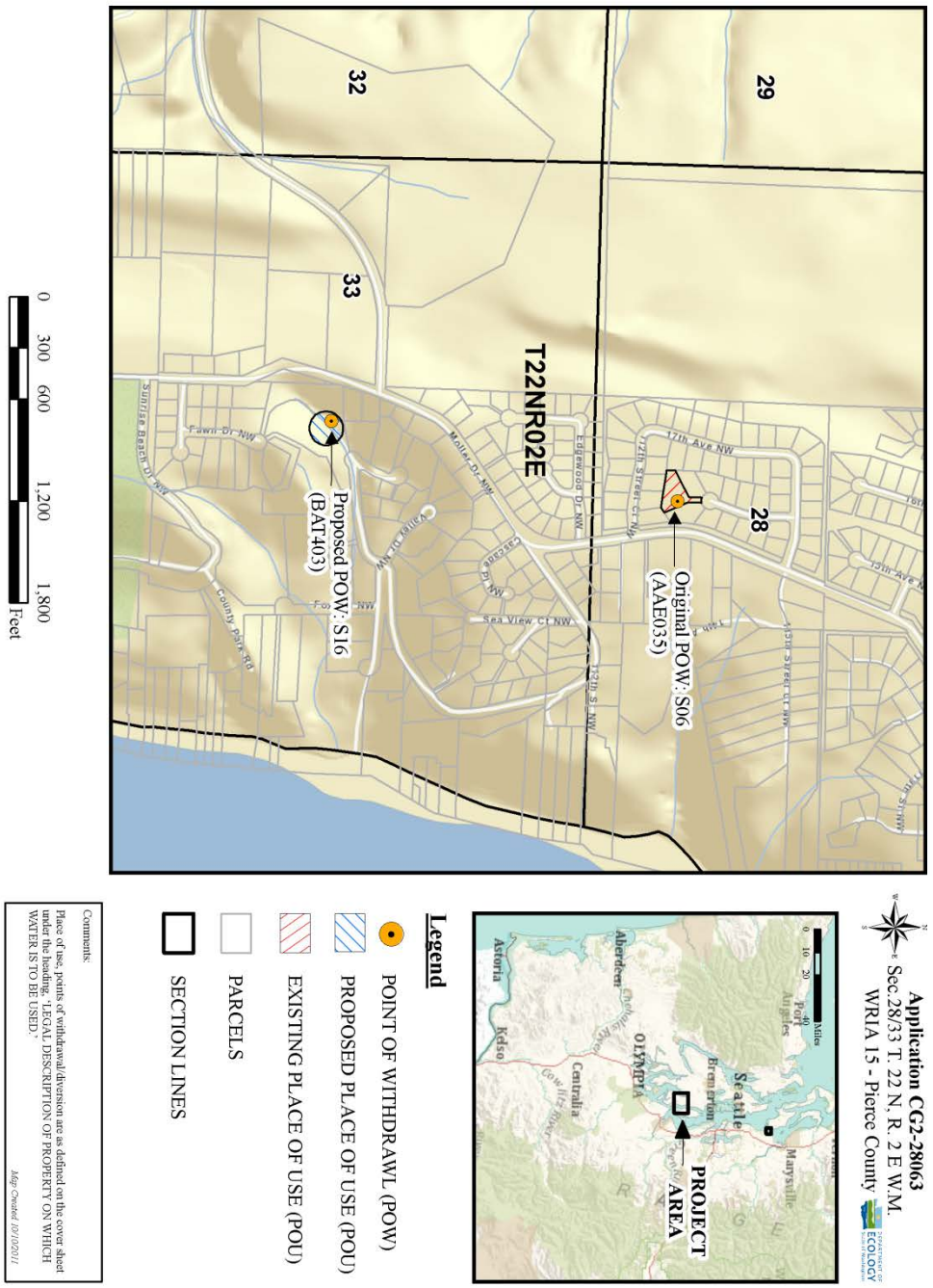
Golder Associates Inc. 2004, Kitsap Watershed Planning (WRIA 15) Instream Flow Assessment Step C Final Report. Redmond, Washington.

Jones, M. A. 1996. Thickness of Unconsolidated Deposits in the Puget Sound Lowland, Washington and British Columbia, a Contribution of the Regional Aquifer-System Analysis Program. Tacoma, Washington: U.S. Geological Survey.

Kahle, S. C. 1998. Hydrogeology of Naval Submarine Base Bangor and Vicinity, Kitsap County, Washington, U.S. Geological Survey.

Robinson and Noble, 2007. Discussion of the hydrogeologic aspects of the proposed mitigation package to achieve settlement of the Nordal Well water right denial (Application G2-29864) and the processing of the Peacock Hill water right application (G2-29819).

Attachment #1



Attachment #2. Water right certificates and permits for the Sea Cliff Water System.

Certificate/ Permit (P) #	***Name***	***Priority date***	***Source***	***gpm***		***ac-ft/yr***	
				Additive (a)	**Non-Additive (na)**	**Additive (a)**	**Non-Additive (na)**
G2-00967C	Washington Water Services	3/27/1970	S14	50		5	
G2-01060C	Harbor Water Company	11/12/1969	S11	16		16	
G2-23001C	Harbor Water Company	6/28/1974	S01 S02	145		57.1	
G2-24111C	Harbor Water Company	2/23/1976	S03	50		74	
G2-24775C	Harbor Water Company[1]	1/19/1978	S01 S02 S03 S09 S16	195		35.7	131.1
G2-24789C	Harbor Water Company	2/2/1978	S04	82		82.5	
G2-26005C	Harbor Water Company/ Spy Glass Water System	9/24/1981	S07	75		13	
G2-26145C	Harbor Water Company	4/30/1982	S12	50		6	
G2-26397C	Harbor Water Company	7/22/1983	S05	50		80	
G2-26951C	Harbor Water Company	8/6/1986	S14	40		32	
G2-28053P	Harbor Water Company	3/3/1991	S15	100			45
G2-28063P	Harbor Water Company	3/6/1991	S06	250			120
G2-28763P	Harbor Water Company	2/17/1993	S08	40			22
G2-29440C	Washington Water Service Co.	11/25/1996	S04 S15	100		194	
Totals				***1,243***		***595.9***	***318.1***

[1] Non-additive to G2-23001 (57.1 ac-ft) and G2-24111 (74 ac-ft).