



**STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY**

**AMENDED REPORT OF EXAMINATION FOR CHANGE  
Change of: Add Points of Withdrawal  
WRTS File #: CG1-\*08242C@1**

PRIORITY DATE	CLAIM NO.	PERMIT NO.	CERTIFICATE NO.
August 11, 1966			5618-A

NAME Town of Coupeville		
ADDRESS/STREET	CITY/STATE	ZIP CODE
PO Box 725	Coupeville, WA	98239

**PUBLIC WATERS TO BE APPROPRIATED**

SOURCE
Coupeville Well Field Complex: In-town, Fort Casey, and Keystone Hill well fields.
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	150	240*

TYPE OF USE, PERIOD OF USE
Municipal, year-round

\* Certificate 5618-A is valid for 150 gpm and 158 afy. Permit 7689 is valid for 82 afy.

**LOCATION OF DIVERSION/WITHDRAWAL**

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
Multiple locations within each well field.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP	RANGE [E. or W.] W.M.	WRIA	COUNTY
Coupeville Well Field Complex	Sections 2, 11, 12, 13, 14 Section 33	31 N  32N	1 E.	6	Island
PARCEL NUMBER	LATITUDE	LONGITUDE	DATUM		

**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 location of the authorized place of use and point(s) of diversion or withdrawal]

Town of Coupeville, WA service area documented in Water System Plan on file with WA State Dept. of Health.
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**DESCRIPTION OF PROPOSED WORKS**

Town of Coupeville pumps water from multiple wells, updated and detailed in the water system plan on file with WA State Dept. of Health. Three well fields comprise the master well field, the Coupeville Well Field Complex. The water is treated to comply with government regulation and serve those within its established service area.
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**DEVELOPMENT SCHEDULE**

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
begun	December 31, 2027	December 31, 2027

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## PROVISIONS

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### Wells, Well logs and Well Construction Standards

1. All well construction shall proceed under the direction, and after issuance of, a Department of Ecology Preliminary Permit to Drill and Test a Well.
2. Each time a new well is constructed in Ft. Casey or Keystone well fields, Town of Coupeville will disconnect one In-town well from the well system and either decommission the well per chapter 173-160 WAC or maintain the well as a monitoring well. Those wells suitable for use as water production wells in case of emergency may remain connected to the system, but shall not be put to use at any time for typical water supply purposes.
3. All wells constructed in the State shall meet the construction requirements of chapter 173-160 WAC entitled "Minimum Standards for the Construction and Maintenance of Wells" and chapter 18.104 RCW titled "Water Well Construction".

Installation and maintenance of an access port as described in chapter 173-160 WAC is required. An air line and gauge may be installed in addition to the access port.

A completed well report of the well shall be submitted by the driller to the Department of Ecology within 30 days of completing the well authorized herein. All pump test data for the well shall be submitted to the Department as it is obtained.

Well #6 and Well 1-90 shall be tagged with a well identification number once proper documentation is filed and Ecology issues new numbers. New wells shall also be tagged with a well identification number. This unique well number shall remain attached to the well. Please reference this number when submitting data.

4. In accordance with chapter 173-160 WAC, 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 a solid waste landfill.

### Measurements, Monitoring, Metering and Reporting

5. An approved measuring device shall be installed and maintained for each of the sources identified by this water right, and for any new wells constructed in the well fields described in this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", chapter 173-173 WAC.
6. Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

### Municipal Supply and Public Water Systems

7. Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water prior to beginning (or modifying) your project Northwest Drinking Water Operations, 20435 72<sup>nd</sup> Avenue S, Suite 200, K17-12, Kent, WA 98032-2358, (253) 396-6750.

### Schedule and Inspections

8. 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 provisions, and to inspect at reasonable times any measuring device used to meet the above provisions.
9. 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 wells or diversions and associated distribution systems for compliance with water law.
10. The water right holder shall file the notice of Proof of Appropriation of water (under which the superseding 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 superseding certificate will reflect the extent of the project perfected within the limitations of the change authorization. Elements of the proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

### General Conditions

11. The water source and/or water transmission facilities are not wholly located upon land owned by the applicant. Issuance of a water right change authorization by this department does not convey a right of access to, or other right to use, land which the applicant does not legally possess. Obtaining such a right is a private matter between applicant and owner of that land.
12. 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.

**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 find the change of water right as recommended will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER the requested change under Groundwater Change Application No. CG1-08242C@1, subject to existing rights and the provisions specified above.

You have a right to appeal this decision. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the "date of receipt" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "date of receipt" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your *Notice of Appeal*.
- Serve and file your appeal in paper form; electronic copies are not accepted.

**1. To file your appeal with the Pollution Control Hearings Board**

Mail appeal to:	OR	Deliver your appeal in person to:
The Pollution Control Hearings Board PO Box 40903 Olympia WA 98504-0903		The Pollution Control Hearings Board 4224 – 6th Ave SE Rowe Six, Bldg 2 Lacey WA 98503

**2. To serve your appeal on the Department of Ecology**

Mail appeal to:	OR	Deliver your appeal in person to:
The Department of Ecology Appeals Coordinator P.O. Box 47608 Olympia WA 98504-7608		The Department of Ecology Appeals Coordinator 300 Desmond Dr SE Lacey WA 98503

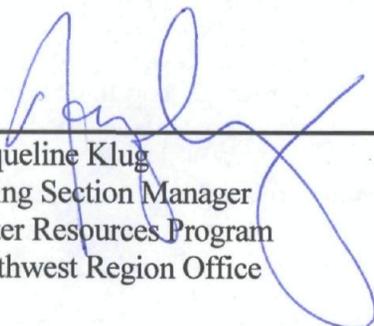
**3. And send a copy of your appeal to:**

Jacqueline Klug  
Acting Section Manager  
Water Resources Program -- Department of Ecology  
3190 160th Avenue SE  
Bellevue, WA 98008-5452

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> .

If you have any questions, please contact Noel Philip with Ecology at (425) 649-7044.

Signed at Bellevue, Washington, this 28 day of January, 2010.

  
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Jacqueline Klug  
Acting Section Manager  
Water Resources Program  
Northwest Region Office

**BACKGROUND**

**Description and Purpose of Proposed Change**

Town of Coupeville, Washington (Coupeville) submitted Groundwater Change Application CG1-\*08242C@1 to the Department of Ecology to add points of withdrawal to Water Right Certificate 5618-A. On April 21, 1999, 82 afy annual quantity of Groundwater Certificate 5618-A was partially rescinded to permit (Groundwater Permit 7689). The remaining portion, 150 gpm and 158 afy, is still authorized by the original certificate (certificate 5618). One superceding certificate will be issued to join the two superceding certificates (5618-A and 7689, issued upon perfection) into one single superceding certificate. Coupeville's current water rights (Table 1) cumulatively authorize 970 gallons per minute (gpm) and 688 acre-feet per year (afy) to serve their updated service area (Attachment 1). This is one of five change applications Coupeville submitted with the goal of consolidating its multiple points of withdrawal into a well field complex so as a municipality it can add back-up or additional points of withdrawal as needed. The new well field complex (point of withdrawal) occupies Sections 2, 11, 12, 13, 14, and 33 in Townships 31N and 32N. Table 2 summarizes the current points of withdrawal written into each of Coupeville's certificates.

**Statement of Authorities**

RCW 90.03.570(1) and (2) state, that if specific conditions are fulfilled, a municipal water supplier is eligible for a change of water right as provided by RCW 90.03.380. This is true even if the right was not put to full beneficial use. RCW 90.03.380(1) states that a water right that has been put to beneficial use may be changed. The point of diversion, place of use, and purpose of use may be changed if it would not result in harm or injury to other water rights. RCW 90.44.100(2) requires that any well or wells added to a ground water permit must tap the same body of public ground water as the original well on the permit. RCW 90.44.100(2) requires that the combined total withdrawal from the original well and any additional well shall not enlarge the right defined by the original permit or certificate. RCW 90.03.386(2) states that a municipal water supplier may change its service area through the water system plan approval process. As long as the municipal water supplier is in compliance with the approved plan, the place of use for the water right is the service area of the plan.

**Legal Requirements for Proposed Change**

The following is a list of requirements that must be met prior to authorizing the proposed change in point of withdrawal.

- **Public Notice**  
Whidbey News Times, April 8 and 15, 2006
- **State Environmental Policy Act (SEPA)**  
Exempt

**INVESTIGATION**

**Field Exam**

Ecology personnel Noel S. Philip and Jerry L. Liszak toured the Coupeville Well Field and waterworks under the guidance of Malcolm Bishop, Public Works Director for Town of Coupeville. Bishop described Coupeville's course of action and the process by which the In-town wells would be converted to monitoring wells for resource protection purposes.

Philip and Liszak noted the locations of existing wells and well sites where well construction is planned. It was noted well tags missing at Well #6 and Well 1-90 shall require Coupeville to pursue new well tags through Ecology as a provision of the permit.

**Proposed Use**

Coupeville wishes to consolidate and add points of withdrawal to create a well field capable of hosting enough wells to fully perfect their rights. Coupeville's development is retarded by the threat of saltwater intrusion. Table 1 shows the certificates involved in this change event. Table 2 shows these certificates subject to change, and their current points of withdrawal.

The well field is necessary to provide Coupeville options in locating new well construction sites. Complications arising due to inadequate water availability, set back requirements, property ownership, and changing hydrogeologic conditions are possible. These conditions can limit the locations available to well construction.

**Other Rights Appurtenant to the Place of Use**

Three wells are within one half-mile of the In-town wells. If they have been in use coincidentally with Coupeville wells, their owners have not experienced, are not concerned, or are unaware of impairment, if any, occurring in their wells due to pumping of the Coupeville wells. It is unlikely continued use will impair these three wells. Coupeville's intention to phase out the In-town well field and convert the wells to monitoring and emergency production further supports that analysis.

**Table 1.** Town of Coupeville Water Rights<sup>1</sup>

File #	Cert or Permit #	Priority Date	Qi (gpm) <sup>2</sup>	Qa (afy) <sup>3</sup>	Township Range Section <sup>4</sup>
G1-*00845SWRIS	880-D	1/1/1928	250	26	32.0N 01.0E 33
G1-*01397CWRIS	01174	3/3/1950	150	42	32.0N 01.0E 33
G1-*08242CWRIS	05618	8/11/1966	150	158	31.0N 01.0E 2, 11, 12, 13, 14
G1-20359CWRIS	G1-20359C	11/20/1972	210	190	32.0N 01.0E 33
G1-20378CWRIS	G1-20378C	11/20/1972	210	190	32.0N 01.0E 33
G1-*08242CWRIS	Permit 7689	08/11/1966	--	82	31.0N 01.0E 2, 11, 12, 13, 14

- Notes:
1. Place of use is same on all certificates: Area served by Town of Coupeville
  2. gpm = gallons per minute
  3. afy = acre-feet per year
  4. Location of certificated Point of Withdrawal.

The Department of Ecology Water Rights Application Tracking System (WRATS) shows no water rights of record within either of the quarter-quarter sections containing the Fort Casey and Keystone Hill well fields. The Ecology Well Log database and the Island County Hydrogeology database (March 2003) show 16 wells within a half-mile radius of Fort Casey well field, and 15 within proximity to the Keystone Hill well field. These potentially exempt wells may be tied to existing water right certificates or claims under a different name.

**Table 2.** Points of withdrawal subject to change per Coupeville water right applications.

Certificate #	Point of Withdrawal Issued By Certificate
880-D	Lot 10, Block 7 of Keister's Alteration Plat of Alexander-Glenwood Addition to Coupeville, WA
1174	Lot 3, Block 28, Thomas Coupe's Plat of Coupeville, T32N, R1E, S33
5618	Government Lot 5, S14, T31N, R1E, W.M.
G1-20359C	Lot 3, Block 28, Thomas Coupe's Plat of Coupeville, T32N, R1E, S33, W.M.
G1-20378C	NE1/4, NW1/4, SE1/4 and SE1/4, SW1/4, NE 1/4, S33, T32N, R1E, W.M.

The distance from the well sites in the Coupeville Well Field Complex to neighboring wells will likely buffer those nearby wells from pumping influence. However, well construction provisions to the permit require a preliminary permit to drill and test each new well. Approval shall not be issued until a proper evaluation of impairment has been made based on well location and estimated well yield. This provision provides an on-going evaluation of impairment by Coupeville wells on claims, certificates, and permits in the immediate area of each new well within the well field.

**Hydrologic and Hydrogeologic Evaluation**

As noted by Easterbrook (1968), Whidbey Island is generally composed of unconsolidated Pleistocene glacial and interglacial deposits that overlie Tertiary and older bedrock. The Island County Groundwater Management Plan, Part A, Technical Memorandum, (GWMP) describes the groundwater flow system on Whidbey Island as a series of discontinuous water-bearing zones (sand and gravel aquifers) surrounded by zones of lower-permeable glacial sediments (silt, clay and till aquitards). All recharge to the system originates as rain falling on the surface of the island. Groundwater generally flows downward in the inland portions of the island then outward through the aquifers toward the coast and offshore. In these discharge areas, groundwater generally flows from deeper to shallower aquifer zones and then discharges to the sea where the aquifers intersect a cliff, beach face or ocean bottom.

The series of aquifers on Whidbey Island is complex, resulting from the deposition and erosion patterns created by at least three glaciation and three inter-glaciation periods. Although the USGS has designated five aquifer zones, termed 'A' (oldest) through 'E' (youngest), these zones are laterally discontinuous, vary in depth and thickness, and likely interconnected at various locations. Multiple aquifers exist at various places on Whidbey Island, but the two most common and subject to withdrawal by Coupeville are Aquifer C and Aquifer D. The degree of connection with marine waters is also likely variable. As a result, the effect of withdrawing groundwater from any particular depth and location could have widely variable impacts on nearby wells and on the potential for seawater intrusion.

Coupeville is a coastal town on central Whidbey Island. Evidence of saltwater intrusion has occurred along the coast in some areas, resulting in the need for Coupeville to begin producing water from sources farther inland not affected by seawater to promote aquifer longevity.

The point of withdrawal is located approximately 200 feet south of Penn Cove, Puget Sound on central Whidbey Island (Attachment 1). The well log and the geologic cross sections found in the *Coupeville Coordinated Water System Plan Regional Supplement* suggest the source of water is Aquifer C (sea level aquifer).

Aquifer C is the water-bearing unit associated with the Whidbey Formation. Easterbrook describes the Whidbey Formation as glacial deposits consisting of horizontally and cross-bedded layers of sand, silt, and clay with two distinct organic (peat)

layers. Aquifer C commonly appears near sea-level on Whidbey Island. Aquifer D is the water-bearing unit associated with the Vashon Drift. Easterbrook describes the Vashon Drift as glacial deposits consisting of the Vashon Till and Esperance Sand including a few lenses of gravel, coarse sand, silt, and clay. Aquifer D appears intermittently at the higher elevations on Whidbey Island. The units are described as zones containing many small, separate aquifers; not one laterally continuous water-bearing zone. Table 3 shows the approximate depths in feet to hydrogeologic units in each section of the proposed well field complex.

**Table 3.** Depth in feet to aquifer in well field complex.

Section	Average Depth to Aquifer <sup>1</sup>	
	D	C
2	32	-87
11	48	-100
12	38	-6
13	-20	-96
14	-3	-75
33	-26	-116

Notes:  
 1. Determined by well log analysis and cross-sections in Coupeville Coordinated Water System Plan  
 Depths are approximate.

The greatest threat to groundwater in Coupeville is seawater intrusion. The potential for seawater intrusion relates to the elevation of the groundwater (or potentiometric surface) relative to sea level. Aquifers having little or no groundwater head above sea level are susceptible. Other factors such as recharge rate, pumping rate, aquifer transmissivity, hydraulic gradient, seasonal variation, and the geometry of the aquifer can influence the distribution and magnitude of seawater intrusion resulting from any particular withdrawal. Increasing concentrations of chloride in groundwater can be an indication of seawater intrusion. Unaffected groundwater in Coupeville generally contains a “background” chloride concentration between 10-20 mg/L. Concentrations of 100 mg/L or greater provide evidence of seawater intrusion unless other sources of chloride are present such as naturally occurring hard groundwater. Very hard groundwater is known to exist in the greater central Whidbey area. Island County has adopted a ranking system to determine whether groundwater quality is diminished due to saltwater intrusion, or occurs with high mineral content. *Island County Water Resources Management Plan: Saltwater Intrusion Topic Paper* (Kelly, 2005) details this discussion.

Coupeville pumps water continually to serve its municipal needs from its certificated points of withdrawal. It has done so for over fifty years. The issue of availability in this case is not the ability of the aquifer to continue to provide water into the future, but the necessity of suitably locating new wells for groundwater production to eliminate any potential for the freshwater-saltwater interface to advance inland. The Island County Health Department ranking system classifies numerous individual wells within one mile of the existing well fields as having a very high risk for seawater intrusion, resulting from a static water level below 8.4 feet MSL and chloride levels higher than 100 mg/L. These wells are mostly located along the western edges of Sections 2 and 11, and in Section 33. There are no known wells classified as medium to high risk within the Fort Casey or Keystone Hill well fields.

Precipitation is the only recharge source on Whidbey Island and it is probable the aquifers are hydraulically connected; pumping from one affects the other. Reports detailing hydrogeology show this; most notably in the Lagoon Point area on Whidbey Island. This interconnectivity allows both aquifers to serve as potential withdrawal depths within the same point of withdrawal, but it also raises impairment issues that require evaluation with the construction of each new well. Positioning wells in the proposed point of withdrawal where the available head above sea-level is highest provides greater security against seawater intrusion, but may impair wells fully penetrating either aquifer. For this reason, new wells must be drilled and tested under the direction of a Preliminary Permit issued by the Department of Ecology.

**Impairment Considerations**

Groundwater wells that are at greatest risk of potential impairment are those which are completed in the same aquifer zone as the subject well, located in close proximity to the subject well, and also located hydrogeologically down-gradient from the subject well. As water in the aquifer travels toward wells that are located down-gradient from the subject well, the subject well may potentially capture this water and impair the production of down-gradient wells. Also, surface water diversions located within a close proximity of the subject well may be impacted by the groundwater withdrawal, depending upon hydraulic continuity of the aquifer and surface water body. An arbitrarily, yet conservatively chosen area of one-half mile (1/2-mile) is used to define “close proximity.” This value is justified experimentally based on current and historical pump test data that show negligible drawdown, and therefore unlikely impairment to wells or surface water diversions, induced by groundwater withdrawal at distances of 1000 feet in most cases. Furthermore, it is widely understood the aquifer systems in Coupeville are not laterally continuous, suggesting physical barriers exist in addition to limiting hydraulic conditions. Pumping at the Coupeville Well Field is not likely to cause impairment at neighboring wells.

**Public Interest Considerations**

Factors considered in determining whether this use of water is in the public interest include but were not limited to: consideration given to exempt wells; existing water right certificates, applications, and claims; potential impacts to the aquifer subject to withdrawal as it pertains to drawdown and water quality (i.e. sea-water intrusion); beneficial use of water as a resource defined in this report. No detriment to the public interest could be identified during the investigation of the subject application. Available data show existing wells in the area are not expected to be impaired by the anticipated operation of the subject well.

**Consideration of Protests and Comments**

No protests exist for this water right change application.

**CONCLUSIONS**

Coupeville can successfully drill new wells farther inland, where the groundwater elevation is highest, to adequately harvest enough groundwater to fully develop their water rights. Each new well location must be evaluated for water availability, impairment to water right holders, and potential for seawater intrusion to be deemed eligible for construction. As each new well is brought online, Coupeville shall decommission, convert to monitoring, or establish an In-town well as an emergency supply, and remove it from active duty.

**RECOMMENDATIONS**

Based on the above investigation, I recommend that the request for change to Water Right Certificate 5618-A be authorized, in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2, and following.

**Purpose of Use and Authorized Quantities**

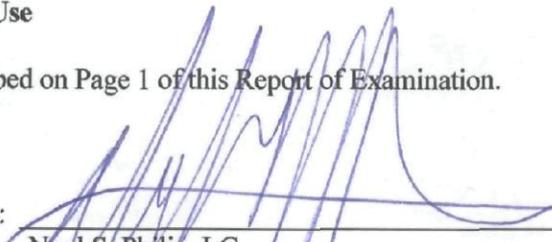
150 gallons per minute, 240 acre-feet per year continuously, is a maximum limit and the water user may only use these amounts of water within the specified limit that is reasonable and beneficial.

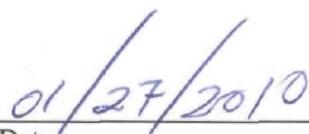
**Point of Withdrawal**

Sections 2, 11, 12, 13, 14, Township 31 North, Range 1 East W.M.  
Section 33, Township 32 North, Range 1 East W.M.

**Place of Use**

As described on Page 1 of this Report of Examination.

Report by:   
Noel S. Philip, LG  
Hydrogeologist  
Water Resources Program

  
Date