POW

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
APPLICATION FOR CHANGE
REPORT OF EXAMINATION
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
March 15, 1986	G2-26881	G2-26881	G2-26881

NAME
One Point Fosdick

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
3318 A Street NW	Gig Harbor	Washington	98335

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well 3 (with Well 1 as emergency back-up)
TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	70	40

QUANTITY, TYPE OF USE, PERIOD OF USE
40 Acre-feet per year — Multiple domestic supply — Year-round, as needed

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
Well #1 - 1430 feet East and 100 feet South of the Northwest corner of Section 5, T. 20 N., R. 2 E.W.M.
Well #3 - 1500 feet East and 1500 feet North of the Southwest corner of Section 32, T. 21 N., R. 2 E.W.M.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
NW¼/SW¼ SW¼	5/32	20/21	2E	15	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The plat of "One Point Fosdick" described as follows: PARCEL 1: Lot 7, supplemental plat of Section 5 & 6, T. 20 N., R. 2 E.W.M., being a portion of abandoned US Military Reservation No. 24, Washington. Together with tidelands of the second class abutting thereon, extended to line of mean low tide. EXCEPT that portion conveyed to Pierce County for Point Fosdick-Gig Harbor Road and Point Fosdick Ferry landing by deed recorded September 29, 1932 under Auditors file No. 1070897. PARCEL 2: Government Lot 6, abandoned military reservation, in Section 5, T. 20 N., R. 2 E.W.M., in Pierce County, Washington; EXCEPT the East 450 feet thereof, and EXCEPT any portion lying Southerly of that certain existing roadway which bisects said tract running in a easterly and Westerly direction, the centerline of which lies 729 feet, more or less, South of the North line of said lot. Together with a non-exclusive road easement upon said private road as it extends over the East 450 feet of said Lot 6.

DESCRIPTION OF PROPOSED WORKS

Well 1: 378 feet deep
Well 3: 326 feet deep

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	Completed	In-use

REPORT

BACKGROUND:

On November 18, 1998, James Kaupp of behalf of the One Point Fosdick Water Board filed an *Application for Change* with the Department of Ecology (Ecology) to add an additional point of withdrawal to Water Right Certificate G2-26881. The application was accepted for processing under the original filing number. The site is located in Water Resource Inventory Area 15 – the Kitsap Peninsula.

A public notice of the proposed change was published and no protests were received.

Under RCW 90.44.100, the Department of Ecology may change an existing ground water certificate after publication of a notice of the application and issuance of findings as prescribed in the case of an original application. The provisions of RCW 90.44.060 and RCW 90.03.290, require that the Department of Ecology find that (1) water is available for appropriation/change; (2) the appropriation/change is for a beneficial use; (3) the appropriation/change will not impair existing water rights; and (4) the appropriation/change will not be detrimental to the public interest.

Based on the provisions of Chapters 90.03 and 90.44, Revised Code of Washington (RCW), and my investigation, I recommend issuance of a superseding certificate.

INVESTIGATIONS:

Ground water certificate G2-26881 was originally issued to the Narrows West Water Company and has a priority date of March 15, 1986. This right authorizes the withdrawal of 200 gallons per minute and 40 acre-feet per year for community domestic supply to the One Point Fosdick homeowners. This well – Well 1, has not been able to operate at that withdrawal rate for a number of years.

The residential development is located at the southernmost tip of the Gig Harbor Peninsula on Point Fosdick, in Pierce County, Washington. Development in the surrounding area is moderately dense and comprised of single-family homes, and small subdivisions. Development along the coast, especially on view lots, is particularly dense. The One Point Fosdick development consists mostly of fairly large homes with moderately sized lawns. Other larger developments in the area are Sunnyview Terrace with 18 connections located immediately west of One Point Fosdick, and the Point Fosdick system with 79 connections located northwest. The One Point Fosdick water system currently provides water to 70 homes.

The One Point Fosdick development is supplied water by three wells. Withdrawals from Well 1, are authorized by this certificate, and withdrawals from Well 2 are authorized by water right permit G2-29055, issued for 30 gpm and 33 acre-feet per year supplemental to G2-26881. In the spring of 1999 Well 3 was brought online, and is currently used on an alternating basis with Well 2.

Well 2 was intended to replace Well 1, which is affected by seawater intrusion. Well 1 is completed below sea level at a total depth of 378 feet, and the pumping level is situated some 60 feet below sea level. The One Point Fosdick Homeowner's Association only recently acquired the water system, and became aware of the extent of the seawater intrusion problem. Water quality in Well 1 has severely deteriorated, and most homes utilized water softeners to mask the poor water quality. Well 2 was completed in a more shallow water bearing zone, but does not produce enough water to totally replace Well 1.

The intent of this Application for Change is to allow water withdrawals from Well 3 instead of from Well 1. Well 3 is located further inland, and is at less risk for seawater intrusion. No increase in the withdrawal rate or annual allocation is requested by the application. The water will remain in use for multiple domestic supply.

Well 3 was constructed in 1995 for developer Jack Willing, as one of 5 wells intended to serve the 30 lot High Acres (Highridge View) development under the ground water exemption. Of the 5 wells constructed at the High Acres site, Well 3 is the deepest; two of the wells are 153 feet deep and two are approximately 190 feet in depth. Instead of being used for the Willing Development, the deepest well was acquired by the One Point Fosdick Homeowner's Association to serve their own development.

Well 3 is located 1,600 feet north of Well 1, and is completed in the same aquifer as Well 1. Well 3 was completed at a depth of 326 feet, and is screened between depths of 316 to 326 feet. The land surface elevation at the Well 3 site is 195.4 feet above sea level, placing the well's completion depth below sea level.

The rest of the Jack Willing system consists of 5 wells, each serving 6 homes. The system is owned and operated by Peninsula Light and Water Company. Jacki Masters of Peninsula Water has voiced concerns that operation of the deep well could adversely affect the water quality in their wells by moving the sea water intrusion problem further inland. It was her understanding at the time Peninsula Water acquired the system that the deep well would be used only for supply emergency fire flow.

Hydrogeology

The Gig Harbor Peninsula consists of thick sequences of unconsolidated and partially consolidated glacial sediments. It is nearly surrounded by Puget Sound; itself carved by glacial scouring. Only the materials extending to 200 feet bsl are well known, because most existing wells tap these materials. Alternating glacial and interglacial periods of deposition have created numerous aquifers and less permeable aquitards within the Puget Sound Lowland. Several of these aquifers and aquitards, or "hydrostratigraphic layers," have been identified within the Gig Harbor area. The principal water bearing formations in this area are Upper Aquifer and the Sea-Level Aquifer.

Department of Ecology records indicate that several other community domestic systems and exempt private wells are located within the general vicinity of the One Point Fosdick system.

I reviewed water right records for the southernmost end of the Gig Harbor peninsula, which includes most of Section 31, small portions of Sections 32 and 33 Township 21 N., R. 2 E.W.M and small portions of Sections 5 and 6, Township 20 N., R. 2 E.W.M, a total area of less than 2 square miles. For this area, 55 well logs are on file with the Department of Ecology, and it is likely that approximately 80 wells have actually been constructed in this area. Of the wells Ecology has records for, 20 are completed at depths of less than 100 feet, 14 are completed between 100 and 150 feet, and only 10 are over 200 feet.

The majority of these wells are completed in the Upper Aquifer system. The wells that are completed in the Sea-level aquifer include One Point Fosdick Well 1, the well for Sunnyview Terrace which is situated immediately east of One Point Fosdick, (certificate 5203, for 60 gpm; 16.2 acre-feet per year), Point Fosdick Water system located about a half mile to the northwest, and the Gig Harbor Airport which along with the Taplet development are both located over a half mile northeast of the subject wells.

The nearest wells to Well 3, as mentioned above, are the "sister" wells constructed for Jack Willing to serve the High Acres development. The November 1995 aquifer test indicated that operation of the deep well had no measurable effect on the shallow wells.

Eight ground water certificates have been issued within the area. These rights authorize the combined withdrawal of 525.5 gpm, and 156.9 acre-feet per year.

Sea-water Intrusion

Because the Kitsap Peninsula region is surrounded by Puget Sound and Hood Canal, most of the region lies within 2 miles from a shoreline and a marine water body. Therefore, seawater intrusion resulting from ground water extraction is a potential concern for a large portion of this region. Since Well 3 is completed below sea level in the Sea Level Aquifer, pumping could increase the risk of seawater intrusion to wells completed in the Sea Level Aquifer located south of the site near Point Fosdick. Pumping could also have an effect on wells within a broader radius of the site, increasing the risk of seawater intrusion.

Approval of this *Application for Change* is contingent on the careful monitoring of chloride levels in Well 3, and if it is to be used, Well 1.

Aquifer Test for Well 3

In November 1995, Jack Willing hired hydrogeologist Walter D. Paterson & Associates to determine the characteristics of the 5 individual wells constructed for the High Acres development and to measure the interference between the wells when pumping. All of the wells are located within 25 feet of each other, and the developer wanted to assess whether they would interfere with each other.

The 4 shallow wells were pumped individually, and as a well field. In each test the drawdowns were measured in all wells.

While, the results of the pump test for the deep well were invalidated by the strong tidal influence on the pumping well, hydrogeologist Walter Paterson calculated a specific capacity of 11.3 gpm\foot, and a transmissivity of 31,000 gpd foot. The tidal coefficient is approximately 0.25 ft. per foot of tide with a time lag of about 2 hours. The post-pumping static water level recovery was complete in less than 9 minutes.

The extent of the aquifer is unknown, but from the amount of available head, the hydrogeologist thought the well could support a withdrawal rate of 66 gpm. He cautioned, however, in his report that operating Well 3 could induce seawater intrusion. The static water level in the well is only 4.8 feet above mean sea-level, and during the pumping test the level dropped as low as 2.5 ft. below mean sea-level. The low point was reached when the tide was 3.0 feet below mean sea-level.

It is possible that Well 3 could contribute to seawater contamination of this limited peninsular aquifer system, however, replacing Well 1 with Well 3 will reduce the overall affect the One Point Fosdick Water System has on the surrounding area. Chloride levels in Well 1 have been quite high, peaking at 292 mg/L in August 2000. Regular testing of the chloride levels in Well 3 has shown levels remaining below 3 mg/L.

Well 3 should be tested at least quarterly for chloride levels, and the static water level monitored on a weekly basis. The total withdrawal rate for this certificate should also be reduced to 70 gpm. Well 1 should be used only in an emergency and, if the well is used, the chloride levels should be monitored closely.

The use of this well for One Point Fosdick is not anticipated to affect the shallower Willing Wells.

Conservation Requirements

The development of a Conservation Plan that has been approved by the Department of Health will be a mandatory requirement of final water right issuance. The plan must describe the specific actions the Association intends to use to conserve water. Typical actions include increasing water rates, charging penalties for higher volume users, and installing water meters.

The new production well must be equipped with a source meter. *Additionally*, to ensure conservation measures are in affect, individual meters should be installed for each connection.

CONCLUSION AND FINDINGS:

1. The original investigation conducted for this water right determined that water was available for appropriation. This finding is not affected by this change application.

2. The water will continue to be put to beneficial use for multiple domestic water supply.

3. The change is not expected to impair any existing water rights, and Well 3 has actually been in production for over two years without creating problems for other well users. However, if the use of Well 3 is found to have an adverse effect on neighboring water users, One Point Fosdick will be required to reduce their pumping, and take whatever other actions are necessary to remedy the situation.

4. The change will not be detrimental to the public interest. The change is not expected to cause any detrimental environmental affects on the natural environment.

In accordance with Chapters 90.03 and 9[redacted] RCW, I find that adding a point of withdraw[redacted] certificate G2-26881as requested, is not detrimental to the public's welfare and will not impair existing rights.

RECOMMENDATIONS:

I recommend the approval of the *Application for Change* and the issuance of a superseding certificate for G2-26881, in the amount of 70 gpm and 40 acre-feet per year. The point of withdrawal will be Well 3, with Well 1 included as an emergency, standby source only. The period of use will be year-round as needed.

This superseding certificate is subject to the following provisions:

PROVISIONS:

"Routine use of Well 1 is no longer authorized by this certificate, the well may be used only in an emergency."

"If the use of Well 3 is found to have an adverse effect of neighboring water users, One Point Fosdick will be required to reduce their pumping, and take whatever other actions are necessary to remedy the situation."

Permittee or certificate holder, and its successor(s) shall provide data on chloride concentrations for the well authorized by this permit or certificate with analysis performed by a state accredited laboratory. Accreditation information may be obtained from Ecology's Quality Assurance Program at (360) 895-4649. Sampling shall occur in April and August of each year, with a copy of the laboratory results for both sampling events submitted by October 15 of the same year, to the Department of Ecology, Southwest Regional Office, Olympia, Washington.

"If pumping of the well authorized by this permit or certificate causes chloride concentrations to exceed 50 milligrams per liter, immediate action shall be required to prevent concentrations from increasing (such as reducing the instantaneous withdrawal rate (gpm) of the well). If corrective measures fail to prevent chloride concentrations from exceeding said level in the future, permittee or certificate holder shall relinquish the option to perfect additional allocated quantities regardless of the stage of development."

The water appropriated under this application will be used for public water supply. The State Board of Health rules require public water supply owners to obtain written approval from the Office of Water Supply, Department of Health, 1112 SE Quince Street, PO Box 47890, Olympia, Washington 98504-7890, prior to any new construction or alterations of a public water supply system.

An approved metering device shall be installed and maintained in accordance with RCW 90.03.360, 90.44.450 and WAC 508-64-020 through –040, and WAC 508-12-030. Meter readings shall be recorded at least monthly.

Under RCW 90.44.250 and 90.54.030, the Department of Ecology is directed to become informed about all aspects of the water resources of the state. The Department is authorized to make such investigations as may be necessary to determine the location, extent, depth, volume, and flow of all groundwaters within the state. Accordingly, the applicant shall monitor and provide an annual summary of the previous year's monthly water level data and monthly totals of water pumped for this well. The summary shall be submitted in tabular format to Ecology's Southwest Regional Office annually, during the month of February, or more frequently if requested by the Department.

Issuance of this water right is subject to the implementation of the minimum requirements established in the Conservation Planning Requirements, Guideline and Requirements for Public Water Systems Regarding Water Use Reporting, Demand Forecasting Methodology, and Conservation Programs, July 1994, and as revised.

Under RCW 90.03.005 and 90.54.020(6), conservation and improved water use efficiency must be emphasized in the management of the State's water resources, and must be considered as a potential new source of water. Accordingly, as part of the terms of this water right, the applicant shall prepare and implement a water conservation plan approved by Department of Health. The standards for such a plan may be obtained from either the Department of Health or the Department of Ecology.

REPORTED BY: Jill E Walsh Date: August 9, 2001

FINDINGS OF FACT AND DECISION

Upon reviewing the above report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I find water is available for appropriation and the appropriation as recommended is a beneficial use and will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER a Superseding Certificate be issued under Ground Water Application Number G2-26881 to existing rights and indicated provisions, to allow appropriation of public ground water for the amount and uses specified in the foregoing report.

Signed at Olympia, Washington, this 9th day of August, 2001.

J. Mike Harris
Water Resources Supervisor
Southwest Regional Office