



State of Washington Application for a Water Right

Please follow the attached instructions to avoid unnecessary delays.



CK # 714066
For Ecology Use
Fees OK-EG
7-25-06
Fee Paid 100.00
Date 7/21/06
FM

G4-35095

Section 1. APPLICANT - PERSON, ORGANIZATION, OR WATER SYSTEM

Name Battelle Memorial Institute Home Tel: () -
Mailing Address Battelle Boulevard, PO Box 999 Work Tel: () -
City Richland State WA Zip+4 99352 + FAX: () -

Section 2. CONTACT - PERSON TO CALL ABOUT THE APPLICATION

Same as above

Name: Thomas Moon Home Tel: () -
Mailing Address: Battelle Richland Operations, Pacific Northwest National Laboratory (PNNL),
Battelle Boulevard, PO Box 999 Work Tel: (509) 376-1271
City: Richland State: WA Zip+4: 99352 + FAX: (509) 372-2896
Relationship to applicant: Staff Member/Effluent Management Group, PNNL Environment, Safety, Health & Quality
Directorate

Section 3. STATEMENT OF INTENT

The applicant requests a permit to use not more than 450 (gallons per minute or
 cubic feet per second) from a surface water source or ground water source (check only one) for the purpose(s)
of EN—Environmental Quality—an Aquatic Environmental Research Laboratory.

ATTACH A "LEGAL" DESCRIPTION OF THE PLACE OF USE. (See instructions.) NOTE: A tax parcel number or a plat number is not sufficient.

The place of use is within the following described real estate, situated in the county of Benton, State of Washington. A parcel of land lying in the NW ¼ of the NE ¼ of Section 23 of the Battelle property within Sections 14, 15 and 23 of Township 10 North, Range 28 East, WA Described as follows:

Commencing at the west quarter corner of said Section 14 (said point being located by reference to the Washington State Coordinate System, South Zone, at coordinates, North 373,527.96 and East 2,307,535.70); thence South 56° 07' 30", West 94.09 feet to the true point of beginning, which point is on the East right-of-way line of the East lane of Stevens Drive, an unplatted road; thence South 0° 23' 35" East 699.57 feet to a point of curve; thence along a 5,689.65 foot radius curve to the left, an arc distance of 568.04 feet to a point of tangency (the chord of said curve bearing south 3° 15' 11" East 567.77 feet); thence South 6° 06' 48" East 1,123.60 ft. to a point of curve; thence along a 5,769.65 foot radius curve to the right, an arc distance of 578.99 feet to a point of tangency (the chord of said curve bearing South 3° 14' 17" East 578.75 feet); thence South 0° 21' 49" East 1,759.62 feet to a point on the North right-of-way line of Fourth St. an unplatted street which is 60 feet wide; thence North 89° 14' 18" East along the North right-of-way line of said Fourth Street a distance of 2,616.01 feet to a point on the West right-of-way line of George Washington Way; thence continuing along the West right-of-way Line of George Washington Way North 1° 25' 01" West 2,132.02 feet; thence North 1° 41' 50" West 2,195.57 feet to a point of curve; thence along a 393.50 foot radius curve to the left, an arc distance of 610.14 feet (the chord of said curve bearing North 46° 07' 02" West 550.83 ft.; thence South 89° 27' 48" West 2,301.63 feet to the point of the beginning.

Above described land is subject to certain easements which are not described herein. This tract (3201 – Tract) purchased from City of Richland. Recorded March 27, 1973 Auditors File No. 647061.

See attached: Beneficial Water Use

Estimate a maximum annual quantity to be used in acre-feet per year: 724 acre-feet per year.

Check if the water use is proposed for a short-term project. Indicate the period of time that the water will be needed:
From ___/___/___ to ___/___/___

If SURFACE WAT	If GROUNDWATER
Name the water source and indicate if stream, spring, lake, etc. If unnamed, write "unnamed spring," "unnamed stream," etc.:	A permit is desired for <u>2</u> well(s). (a primary and back-up)
Number of diversions: _____	
Source flows into (name of body of water):	Size & depth of wells: Size approximately 12 inch diameter Depth approximately 100 feet SEE ATTACHMENT A CONTAINING A DRILLER'S LOG FROM A NEARBY WELL ASSOCIATED WITH THE SAME SOURCE.

LOCATION

Enter the north-south and east-west distances in feet from the point of diversion or withdrawal to the nearest section corner:
The distances from the proposed point of withdrawal to the corner of sections 14, 15, 22, and 23 are approximately 830 feet west and 1,370 feet north.

¼ of	¼ of	Section	Township	Range(E/W)	County	If location of source is platted, complete below:		
						Lot	Block	Subdivision
NW	NW	23	10 N	28 E	Benton			

For Ecology Use Date Received: 07/21/2006 Priority Date: 07/21/2006
 SEPA: Exempt/Not Exempt FERC License # _____ Dept. Of Health # _____
 Date Accepted As Complete _____ By _____ Date Returned _____ By _____ WRIA: 40

Appl. No.: G4-35095

Section 5. GENERAL WATER SYSTEM INFORMATION

- A. Name of system, if named: N/A
- B. Briefly describe your proposed water system. **(See instructions.)**
The system will consist of a primary well and a back-up well constructed in the uppermost unconfined aquifer. The size and depth of the wells will be approximately 12 inches in diameter and 100 feet deep.
- C. Do you already have any water rights or claims associated with this property or system? YES NO

The certificate number of existing groundwater well is G4-27499CWRIS. The maximum instantaneous withdrawal rate and the annual quantity of withdrawal are 500 gpm and 464 ac-ft, respectively. Battelle submitted a groundwater right change application (CG4-27499C) for this certificate, which was processed, although an onsite proof examination has not yet been completed. The certificate is supplemental to an existing surface water diversion from the Columbia River. The supplemental well is used when the surface water diversion fails. The certificate of the Columbia River diversion is S4-*18937CWRIS (10176). The maximum instantaneous diversion rate and the annual quantity of diversion are 4.4 cfs and 880 ac-ft, respectively. Battelle submitted a surface water right change application (CS4-SWC10176) for this certificate, which was processed, although an onsite proof examination has not yet been completed.

Section 6. DOMESTIC / PUBLIC WATER SUPPLY SYSTEM INFORMATION
(Completed for all domestic/public supply uses.)

- A. Number of "connections" requested: _____ Type of connection _____
(Homes, Apartment, Recreational, etc.)
- B. Are you within the area of an approved water system? YES NO
If yes, explain why you are unable to connect to the system. *Note: Regional water systems are identified by your County Health Department.*

Complete C. and D. only if the proposed water system will have fifteen or more connections.

- C. Do you have a current water system plan approved by the Washington State Department of Health? YES NO
If yes, when was it approved? _____ Please attach the current approved version of your plan.
- D. Do you have an approved conservation plan? YES NO
If yes, when was it approved? _____ Please attach the current approved version of your plan.

Section 7. IRRIGATION/AGRICULTURAL/FARM INFORMATION
(Complete for all irrigation and agriculture uses.)

- A. Total number of acres to be irrigated: _____
- B. List total number of acres for other specified agricultural uses:
Use _____ Acres _____
- C. Total number of acres to be covered by this application: _____
- D. Family Farm Act (Initiative Measure Number 59, November 3, 1977, as amended by Chapter 237, Laws of 2001)
Add up the acreage in which you have a controlling interest, including only:
‡ Acreage irrigated under water rights acquired after December 8, 1977;
‡ Acreage proposed to be irrigated under this application;
‡ Acreage proposed to be irrigated under other pending application(s).
1. Is the combined acreage greater than 6000 acres? YES NO
2. Do you have a controlling interest in a Family Farm Development Permit? YES NO
If yes, enter permit no: _____
- E. Farm uses:
Stockwater - Total # of animals _____ Animal type _____ (If dairy cattle, see below)
Dairy - # Milking _____ # Non-milking _____

Section 8. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? YES NO

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point, and some portion of the storage will be above grade, you must also apply for a reservoir permit. You can get a reservoir permit application from the Department of Ecology.

Section 9. DRIVING DIRECTIONS

Provide detailed driving instructions to the project site.

Directions to the Point of Diversion:

From the center of the City of Richland on George Washington Way, proceed north to 5th Street. Turn left and proceed to the Stevens Drive. Before reaching the intersection (approximately 100 ft.) the well is located approximately 800 ft. north. (Location map provided in Section 10)

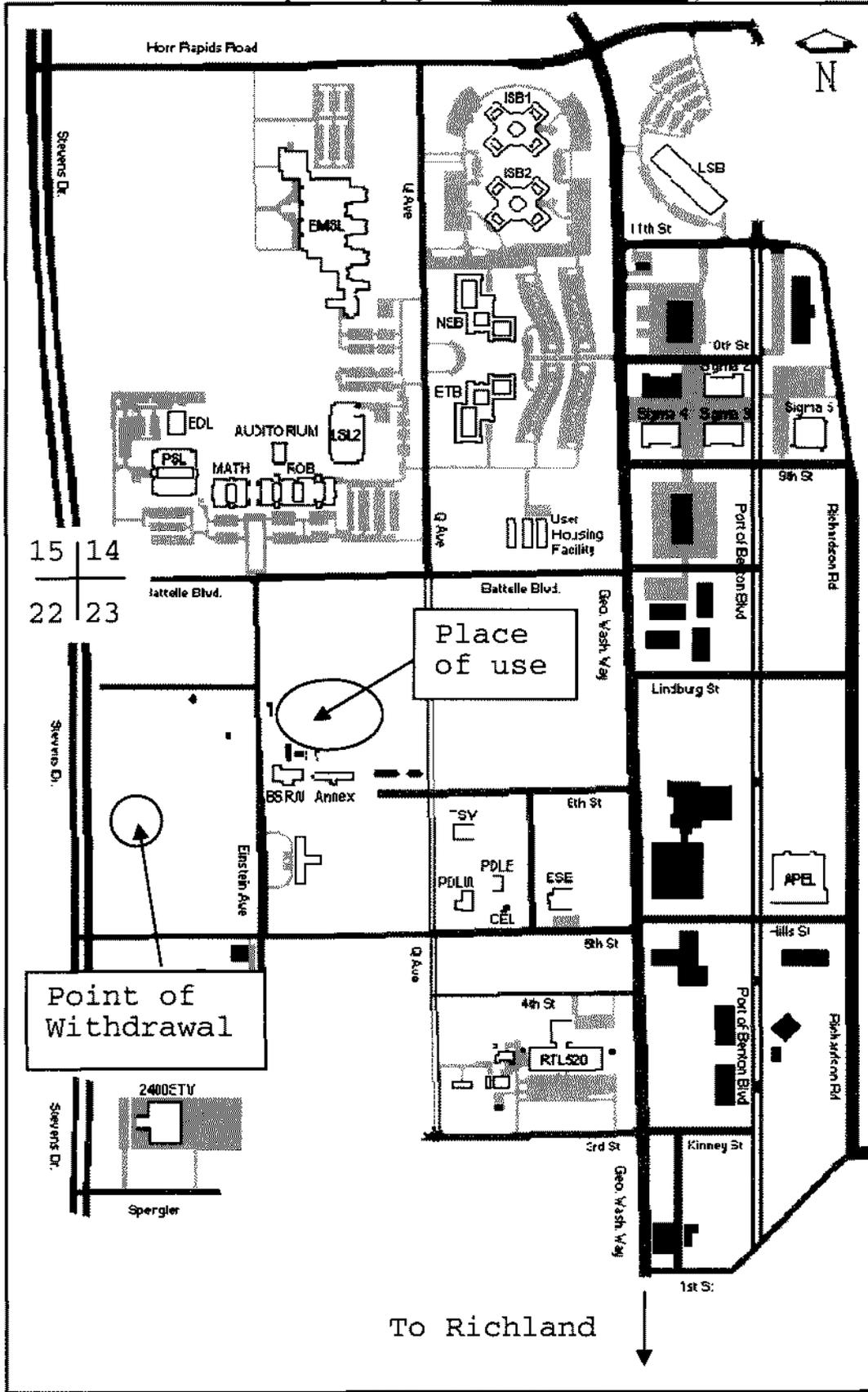
Directions to the Place of Use:

From the center of the City of Richland on George Washington Way, proceed north to 5th Street. Turn left and proceed to Einstein Ave. Turn right and proceed approx. ¼ mile north. The place of use is approximately 200 feet east of the road.

APPLICATION

Section 10. REQUIRED MAP

A. Attach a map of the project. (See instructions.)

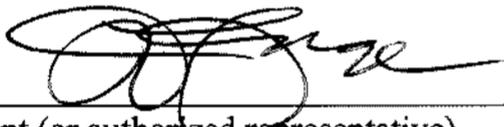


Section 11. PROPERTY OWNERSHIP

A. Does the applicant own the land on which the water will be used? X YES NO
If no, explain the applicant's interest in the place of use and provide the name(s) and address(es) of the owner(s):

B. Does the applicant own the land on which the water source is located? X YES NO
If no, submit a copy of agreement:

I certify that the information above is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though I may have been assisted in the preparation of the above application by the employees of the Department of Ecology, all responsibility for the accuracy of the information rests with me.



Applicant (or authorized representative)

7/10/2006

Date

SAME

Landowner for place of use (if same as applicant, write "same")

Date

Use this page to continue your answers to any questions on the application. Please indicate section number before answer.

We are returning your application for the following reason(s):	
_____ Examination fee was not enclosed	APPLICANT PLEASE RETURN TO CASHIER, PO BOX 5128, LACEY, WA 98509-5128
_____ Section number(s) _____ is/are incomplete	APPLICANT PLEASE RETURN TO THE APPROPRIATE REGIONAL OFFICE
Explanation:	
Please provide the additional information requested above and return your application by _____ (date).	

Ecology staff _____ Date _____

Ecology is an Equal Opportunity and Affirmative Action employer. To receive this document in alternative format, contact the Water Resources Program at (360) 407-6604 (Voice) or (360) 407-6006 (TDD).

APPLICATION

ATTACHMENT A

BENEFICIAL WATER USE STATEMENT

Pacific Northwest National Laboratory's (PNNL) Aquatic Research Laboratory (ARL) address problems primarily related to energy development and environmental quality of our rivers. The ARL provides a facility where researchers conduct science and develop technologies which have a major impact on aquatic resource management issues at Hanford, the Northwest, and the Nation. The ARL supports studies on major issues affecting the aquatic environment include the safe passage of juvenile salmon past hydroelectric facilities in the Columbia River; computational modeling of hydraulic conditions near hydroelectric facilities; and fish behavior and ecology in habitats affected by man's activities. Because the ARL is shared by a wide variety of researchers at PNNL, experts in related fields are available to provide a multi-disciplinary approach to solving problems. Biologists and engineers work side by side to solve problems related to a variety of anthropogenic impacts to the aquatic environment involving fish physiology, aquatic toxicology, fluid dynamics, and animal husbandry.

Fish Physiology

Physiological studies of fish are routinely conducted in the ARL. The current facility houses two swim chambers which are large enough to measure respiration and energy expenditure of most fish, including adult salmon and juvenile white sturgeon. A combination of a gas super-saturation system and a hyperbaric chamber have been used to create dissolved nitrogen and pressure profiles that can be altered to simulate a range of conditions representative of fish passage systems at hydroelectric dams. Using a large outdoor tank, sound and light have been investigated as ways to deter fish movement into undesirable areas around irrigation diversions and hydroelectric dams. Physiological impacts of dam passage have been investigated within a flume that is able to re-create the shear and turbulence environment of a hydroelectric turbine. Other studies have investigated the impacts to salmon from irrigation intake screens using the actual working section from a rotating drum screen. The facility is also used to develop new technologies to monitor the aquatic environment including development and testing of Battelle's sensor fish, radio- and acoustic transmitters, and other technologies.

Fluid Dynamics

In addition to biological studies of the aquatic environment, the ARL is used to measure flow fields in scaled turbine outfall structures. These empirical data are used to develop very detailed three-dimensional computational fluid dynamics models. Recent work has involved mapping the shear and turbulence associated with new generation hydroturbine designs that are being designed for public and private hydroelectric projects in the Pacific Northwest.

Animal Husbandry

The ARL is also used for animal husbandry. A rainbow trout broodstock has been maintained on-and-off at the current facility since the 1970s. These fish have been used in predator-prey studies, and other physiological and behavioral studies. At those times the broodstock has not been maintained, research animals have been brought into the facility as required to meet project-specific objectives. Maintenance of the animal populations has been accomplished in the same building as many of the other research animals. This has enabled better control over access and has reduced the likelihood of persons from outside the Laboratory disrupting on-going research projects.

ATTACHMENT B

WELL LOG from Groundwater Certificate G4-27499CWRIS

File Original and First Copy with Department of Ecology
 Second Copy - Owner's Copy
 Third Copy - Driller's Copy

Application No. 64-27499
 Permit No. 64-27499

WATER WELL REPORT
 STATE OF WASHINGTON

(1) OWNER: Name Bottleik Pacific NW Lab. ADDRESS 16300 23rd N. SW W.M.
 LOCATION OF WELL: County Benton 16300 23rd N. SW W.M.

Bearing and distance from section of subdivision corner Dave

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other

(4) TYPE OF WORK: Owner's number of well 1
 Method: Dug Bored
 New well Cable Driven
 Deepened Rotary Jetted
 Reconditioned

(5) DIMENSIONS: Diameter of well 8 inches
 Drilled 100 ft. Depth of completed well _____ ft.

(6) CONSTRUCTION DETAILS:
 Casing installed: 8 " Diam. from 0 ft. to 50 ft.
 Threaded " Diam. from _____ ft. to _____ ft.
 Welded " Diam. from _____ ft. to _____ ft.

Perforations: Yes No
 Type of perforator used _____
 SIZE of perforations _____ in. by _____ in.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.

Screens: Yes No
 Manufacturer's Name _____ Model No. _____
 Type _____
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes No Size of gravel _____
 Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? _____
 Material used in seal _____
 Did any strata contain unusable water? Yes No
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____ H.P. _____
 Type: _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____
 Static level 4519' ft. below top of well Date 3/18/83
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes No If yes, by whom? George Anli
 Yield: 500 gal/min. with 272 ft. drawdown after _____ hrs.
6

Recovery data (time taken to raise water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
 Bailor test _____ gal/min. with _____ ft. drawdown after _____ hrs.
 Artesian flow _____ s.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG: Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
<u>3000 gravel - 100% 1/2"</u>	<u>0</u>	<u>17</u>
<u>silt & sand & gravel</u>	<u>17</u>	<u>32</u>
<u>silt & gravel</u>	<u>32</u>	<u>50</u>
<u>sand & gravel - water</u>	<u>50</u>	<u>74</u>
<u>small gravel & coarse sand</u>	<u>74</u>	<u>82</u>
<u>silt & clay</u>	<u>82</u>	<u>99</u>
<u>clay</u>	<u>99</u>	<u>100</u>

Info taken from drilling log given to bottle by driller by 3/18/83

Work started 10/4 1979 Completed 10/11 1979

WELL DRILLER'S STATEMENT:
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Jersey Buttens (Type or print)
 Address _____
 (Signed) _____ (Well Driller)
 License No. _____ Date 3/24/83

(USE ADDITIONAL SHEETS IF NECESSARY)