



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

May 16, 2014

City of Yakima Water/Irrigation Division  
Attn: David Brown  
2301 Fruitvale Blvd  
Yakima, WA 98902

**RE: Preliminary Permit to conduct recharge and recovery testing as part of the pilot test for aquifer storage and recovery (ASR) under Reservoir Application No. R4-34552 within the SE $\frac{1}{4}$  NE  $\frac{1}{4}$  of Section 36, T. 13 N., R. 18E.W.M**

This letter serves as a PRELIMINARY PERMIT to conduct recharge and recovery testing as part of the pilot test for Yakima's ASR project under Application No. R4-34552. Please read this letter carefully. In accordance with RCW 90.03.290, **failure to comply with the conditions of this Preliminary Permit shall result in the cancellation of the Preliminary Permit and the associated water right application. This Preliminary Permit does not authorize any beneficial use of water.** The City of Yakima has groundwater rights on the Gardner Well and other wells. This authorization does not affect Yakima's ability to exercise those water rights.

On April 12, 2002, the City of Yakima filed Application No. R4-34552 with the Washington State Department of Ecology (Ecology) for a new reservoir permit. The source of water is a diversion from the Naches River under Court Claim Nos. 02110, (A) 02826, (A) 03014, (A) 03015, and (A) 05474, Superseding Permit No. S4-01141P(B), and Certificate No. G4-CVI-4P149. The existing diversion structure from the Naches River is located within the SW  $\frac{1}{4}$ , Section 13, Township 14 N, Range 17E.W.M., Yakima County, Washington. The proposed reservoir is an aquifer in the Upper Ellensburg Formation. The proposed project entails diversion of source water, treatment at the City of Yakima's water treatment plant, conveyance through the distribution system, injection into the aquifer system, and withdrawal of the stored water by wells at a later date.

The proposed point of injection and withdrawal is Yakima's Gardner well located approximately 1400 feet south and 1250 feet west of the northeast corner of Section 36, T. 13 N., R. 18E.W.M. The associated Yakima County Tax Parcel No. is 18133614033. The well is located in the northwest corner of Gardner Park in the south end of the City of Yakima. Under the authority of RCW 90.03.290 and RCW 90.44.060, Ecology may issue a Preliminary Permit requiring the applicant to conduct studies, surveys, and investigations necessary to provide the information needed to properly assess the subject application. This Preliminary Permit is intended to assist in the collection of information required by Chapter 173-157 WAC for artificial groundwater storage and recovery applications. Work done under this Preliminary Permit will also be used to

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evaluate well performance and operational variables. The work under this permit is part of a larger effort to collect all of the supporting documentation needed for Ecology to process the City's reservoir permit application.

This project is part of the groundwater storage element of the Yakima Basin Integrated Water Resource Management Plan located at <http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html>. Potential benefits of this project include:

- Surface water diverted in winter months can be used to restore the aquifer water balance and build up a reservoir over time, to be drawn upon as needed.
- Capturing winter streamflow for use in summer will help off-set anticipated hydrologic shifts in the timing of runoff resulting from climate change.
- Over time, potentially large volumes of water could be stored underground in the Yakima Valley for far less cost compared to an equivalent surface water storage facility.
- Artificially recharged groundwater is likely to increase Yakima River baseflow year round.
- Yakima River benefits from increased baseflow are likely to accrue above the Parker gage, potentially increasing Total Water Supply Available.
- The City of Yakima may reduce their diversion of surface water during low flow times and draw upon groundwater stored in the aquifers, allowing more water to pass their diversion on the Naches River during that time.
- Stored groundwater could be pumped and used to augment river flow.
- Additional recharge/recovery wells can be installed to increase the capacity of the system and spread capital costs over time.
- Interties with neighboring water systems may be included in an expanded regional groundwater recharge program.
- Recharged water and associated water seepage to the river may be used to offset or mitigate other water uses.

Work to be performed under this Preliminary Permit is described in the City of Yakima Gardner Well ASR Test Plan, prepared by Golder Associate, Inc., dated May 8, 2014, and the attached Gardner Well ASR Test Quality Assurance Project Plan, dated April 10, 2014. The objectives of the proposed test plan are to:

- Determine well performance and operational variables.
- Provide information necessary to document, evaluate, and process reservoir permit application G4-34552.
- Assess groundwater quality during intermediate-scale ASR pilot testing to ensure compliance with state groundwater quality standards.
- Establish baseline and trends for pre-ASR static water levels and dynamic (long term recharge and pumping) water levels.
- Track well performance after baseline.
- Assess aquifer hydraulic response to ASR operations.

Data gathered during this work will assist the City of Yakima and Ecology in evaluating project operation, planning future testing and monitoring, and collection of information that can be used to prepare a permit that meets the requirements of Chapter 173-157 WAC, as proposed in Reservoir Permit Application No. R4-34552.

This project includes injection of chlorinated drinking water from the City of Yakima's municipal water system into the Ellensburg Formation aquifer. In support of this project, the City of Yakima has submitted a Draft AKART (All Known, Available and Reasonable methods of prevention, control and Treatment) report for Ecology's review. An AKART analysis is required because the source water contains certain disinfection byproducts (DBPs) in concentrations that exceed the state groundwater quality criteria specified in Chapter 173-200 WAC. Formation of DBPs can be minimized, but generally not avoided in municipal water systems because these systems are required to maintain residual chloride concentrations for disinfection. All of the water quality samples collected by Yakima have met drinking water standards for DBPs.

For projects using municipal drinking water for groundwater recharge that may exceed state groundwater quality criteria, Ecology must make a determination of Overriding Public Interest as recommended in WAC 173-157-200(2) and WAC 173-200-050(3)(b)(vi) before a groundwater reservoir permit can be issued pursuant to Chapter 173-157 WAC. This determination requires approval of an AKART analysis to ensure that parameter concentrations are minimized to the maximum extent reasonable. Ecology has reviewed a Draft AKART report for the project and provided comments to the City of Yakima. Preparation of a final report is on-going.

Pilot testing conducted by the City of Yakima in 2000-01 using the Kissel Park Well found that concentrations of DBPs, including trihalomethanes (THMs) haloacetic acids (HAAs), can increase after injection and storage of water. Concentrations of total THMs rose from 7.1 µg/L to 24.4 µg/L before decreasing to 4 µg/L during recovery. Total HAAs rose from 8.3 µg/L to 34.9 µg/L before decreasing to 1 µg/L during recovery.

Water quality data collected from the City of Yakima's distribution system indicate a wide variation in DBP concentrations ranging from non-detected to more than 50 µg/L. Although all concentrations detected were below the drinking water standards, Ecology recommends that carefully managed recharge testing proceed with adequate safeguards in place to prevent the injection of water with DBP levels higher than ½ the current drinking water limits because concentrations can increase in groundwater after recharge. This includes the requirement that the City of Yakima continue to follow WA DOH and US EPA guidance and requirements to minimize the formation of DBPs to the maximum extent reasonable. The data collected from testing done under this Preliminary Permit will be of great value in risk identification, risk minimization and developing effective strategies to address those risks that remain.

You are hereby granted a PRELIMINARY PERMIT to proceed with testing as specified in the City of Yakima Gardner Well ASR Test Plan, prepared by Golder Associate, Inc., dated May 8, 2014, and the attached Gardner Well ASR Test Quality Assurance Project Plan, dated April 10, 2014. This letter serves as a PRELIMINARY PERMIT subject to existing rights and the following conditions:

**I. General Conditions**

1. This PRELIMINARY PERMIT becomes effective immediately and will remain in effect until January 1, 2016, unless sooner revoked or revised by Ecology.
2. All expenses, risks, and liabilities incurred during testing shall be borne by the applicant. If senior water right holders, including wells exempt from permitting under RCW 90.44.050, are adversely affected during any portion of the aquifer test, or data collection activities, the test shall be terminated immediately.
3. The granting of this PRELIMINARY PERMIT shall not be construed, by inference or otherwise, that the subject application will ultimately be approved.
4. Failure to comply with any of the terms and/or conditions of this PRELIMINARY PERMIT will result in this authorization being immediately terminated and the application on which it is based shall be automatically canceled (RCW 90.03.290(2)(a)). This could include issuance of administrative orders to Cease and Desist, and may also subject the violator to civil penalties.
5. This authorization does not imply or grant any right to withdraw public groundwater from any well other than that authorized under this PRELIMINARY PERMIT. The City of Yakima has groundwater rights on the Gardner Well and other wells. This authorization does not affect the City of Yakima's ability to exercise those water rights.
6. This authorization does not imply or grant any right to withdraw water for any beneficial purpose or use beyond those rights currently held by the City of Yakima.
7. No discharge to surface waters of the state is authorized. The City of Yakima shall monitor the discharge of water on the surface to ensure that all discharge water infiltrates prior to reaching surface water. Water quality field parameters shall be observed during the pumping test, per the approved workplan. If any water quality problems are observed during any portion of the aquifer test, water quality samples shall be collected for laboratory analyses and/or the test shall be terminated immediately.
8. The City of Yakima shall carefully manage recharge testing and proceed with adequate safeguards in place to prevent the injection of water with DBPs concentrations higher than ½ the current drinking water limits for DBPs. This includes the requirement that the City of Yakima continue to follow WA DOH and US EPA guidance and requirements to minimize the formation of disinfection bi-products to the maximum extent reasonable.

9. Issuance of this PRELIMINARY PERMIT 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 the applicant and owner of the land.
10. All activities shall comply with the procedures as specified in the City of Yakima Gardner Well ASR Test Plan, prepared by Golder Associate, Inc., dated May 8, 2014, and the attached Gardner Well ASR Test Quality Assurance Project Plan, dated April 10, 2014. Copies of the approved Test Plan and Quality Assurance Project Plan can be obtained by contacting Ecology's project coordinator.
11. Deviations from the program outlined in the City of Yakima Gardner Well ASR Test Plan, prepared by Golder Associate, Inc., dated May 8, 2014, and the attached Gardner Well ASR Test Quality Assurance Project Plan, dated April 10, 2014 shall be documented and request for approval shall be submitted in writing to Ecology's project coordinator. Any additional testing beyond that proposed in the approved workplan shall be documented and requested in writing from Ecology's project coordinator.
12. The scope of this PRELIMINARY PERMIT is limited as set forth below.

## **II. Project Management**

1. The project coordinator for Ecology is:

Name: Dave Nazy  
Address: 300 Desmond Drive  
PO Box 47600  
Lacey, WA 98504-7600  
Phone: (360) 407-6038

Communications between Ecology and the applicant, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this PRELIMINARY PERMIT shall be directed through the Ecology project coordinator.

## **III. Pumping, Recharge, and Recovery Testing**

1. The applicant shall notify the Ecology a minimum of five working days in advance, prior to the start of pumping or recharge of the ASR well. All data acquired as part of this work shall be tabulated and provided electronically (e.g. spreadsheet) to Ecology within 30 days of completion of testing.
2. A licensed hydrogeologist shall oversee well testing and provide analysis. The test(s) will include both step-drawdown and constant rate recharge and pumping components, not to exceed a pumping or recovery rate of 3200 gallons per minute. The applicant shall provide all equipment necessary to collect water level and water quality data. The above information shall be incorporated into the report that will detail all data and information collected pursuant to this Preliminary Permit. The applicant shall make this report available to Ecology for review and comment.

**YOUR RIGHT TO APPEAL**

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

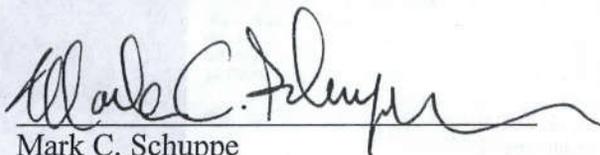
- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

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

**ADDRESS AND LOCATION INFORMATION**

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

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://www.leg.wa.gov/CodeReviser>



Mark C. Schuppe  
Operations Manager  
Office of Columbia River

DN:MCS:AH(140513)

Enclosure: Your Right To Be Heard

By certified mail: 7010 0290 0000 7127 0323

CC: Philip Rigdon, Yakama Nation

PS Form 3811, February 2004  
Domestic Return Receipt  
102595-02-M-1540

7010 0290 0000 7127 0323

2. Article Number (Transfer from service label)

ATTN: DAVID BROWN  
CITY OF YAKIMA / WATER  
IRRIGATION DISTRICT  
2301 FRUITVALE BLVD  
YAKIMA, WA 98902  
WA (140513)

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■ Attach this card to the back of the mailpiece, or on the front if space permits.

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4. Restricted Delivery? (Extra Fee)  
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D. Is delivery address different from item 1?  Yes  No  
 If YES, enter delivery address below:

B. Received by (Printed Name) \_\_\_\_\_  
 C. Date of Delivery \_\_\_\_\_

A. Signature *John J. MacFarland*  Agent  Addressee

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PS Form 3800, August 2006  
See Reverse for Instructions

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 IRRIGATION DISTRICT  
 2301 FRUITVALE BLVD  
 YAKIMA, WA 98902  
 WA (140513)

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