

## AQUIFER STORAGE and RECOVERY (ASR) LIMITED LICENSE #003

The Oregon Water Resources Commission issues this limited license for ASR TESTING to:

Clackamas River Water  
c/o Greg Drechsler, P.E.  
16770 SE 82<sup>nd</sup> Drive  
Clackamas, OR 97015

Telephone: (503) 722-9225

The licensee may divert up to 3 cfs from the Clackamas River, a tributary of the Willamette River, using authorization of either water right Permit S-22581, held by South Fork Water Board for municipal use, or Permit S-34426, held by Clackamas River Water for municipal use, or this ASR limited license for ASR testing as a non-municipal use.

The point of diversion on the Clackamas River for Permit S-22581 is located at T2S/R2E, Section 21, NW1/4 SW1/4 and the point of diversion on the Clackamas River for Permit S-34426 is located at T2S/R2E, Section 16, SE1/4 NE1/4. During the period November 1st through June 30th, diversion from either of these points is allowable for ASR testing as a non-municipal use under this ASR limited license.

The licensee may store up to 200 million gallons in a basalt aquifer using 6 injection wells. The licensee may recover a combined withdrawal of up to 12,000 gpm of stored water through the same 6 wells. The maximum storage duration is the five-year duration of this limited license.

With the authorization of individual ASR well test plans, up to SIX ASR wells for injection and recovery are potentially allowed at a combined rate up to 12,000 gpm. These wells consist of the following:

<u>Well Name or Proposed Location</u>	<u>Well Location within T2S/R2E WM.</u>
Well CRW-1	Section 29, SE1/4 SE1/4
<b>(Any five of the following six)</b>	
Additional well by CRW-1 (proposed)	Section 29, SE1/4 SE1/4
Redland Road Pump Station (proposed)	Section 34, SW1/4 NW1/4
Holcomb Lane Pump Station (proposed)	Section 28, SW1/4 NW1/4
Holly Lane Pump Station (proposed)	Section 33, NE1/4 NW1/4
Housing Authority Well #2	Section 29, NE1/4 SE1/4
Old Park Place Well #18	Section 29, SW1/4 SW1/4

**This is a final order in other than contested case.** Pursuant to ORS 536.075 and OAR 137-004-080 and OAR 690-01-005 you may either petition the Director for reconsideration of this order or petition for judicial review of this order. As provided in ORS 536.075, this order is subject to judicial review under ORS 183.484. Any petition for judicial review of the order must be filed within the 60 day time period specified by ORS 183.484(2).

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The duration of this limited license is five years. This time was the requested limited license duration. This limited license expires on the fifth anniversary of issuance.

Except as it conflicts with other provisions of this limited license, the licensee is authorized to pursue the project schedule, monitoring, and other features noted in the ASR test plan for CRW-1. That plan may be amended and approved pursuant to condition (4)(A)(iii). The project schedule in the ASR test plan may be reasonably adjusted by the licensee to reflect the license issuance date or other delays. Features of that ASR testing plan are provided in the application documents entitled:

Final Review Plan  
Aquifer Storage and Recovery  
Pilot Test Work Plan  
Prepared for Clackamas River Water  
Prepared by Montgomery Watson & Golder Associates  
September 22, 2000

And

Montgomery Watson Technical Memorandum  
Dated February 15, 2001  
From: Kathryn Mallon  
To: Greg Drechsler  
Subject: Limited License Application Supplemental Information

This limited license is issued with the following conditions:

- 1) License Renewal. The limited license may be renewed if the licensee demonstrates to the Director's satisfaction that further testing is necessary and that the licensee complied with the terms of the limited license.
- 2) Notice Prior to Injection and Recovery. The licensee shall give notice, in writing, to the watermaster not less than 15 days in advance of either initiating any injection under the limited license or recovering stored water. The injection notice shall include the limited license number, the location of the injection source water diversion, the quantity of water to be diverted from that source, the time of injection, and the place of injection. The recovery notice shall include the limited license number, the location of the recovery well(s), the time of recovery, and the quantity of water to be recovered.
- 3) Record of Use. The permittee shall maintain a record of injection and recovery, including the total number of hours of injection and recovery and the total metered quantity injected and recovered. The record of use may be reviewed by Department staff upon request.

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4) Modification/Revocation. The Department shall notify the licensee in writing and allow the licensee to respond when considering the following actions:

(A) The Director may modify the ASR limited license for any of the following reasons:

(i) to reflect changes in Oregon Health Division (HD) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;

(ii) to address needed technological changes as requested by DEQ or HD to minimize constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165);

(iii) upon written request from the applicant for minor adjustments to the authorization in the limited license. (For purposes of this license, a well location change to an adjacent 1/4 1/4 section is a minor adjustment.)

(B) The Director may revoke or modify the ASR limited license for any of the following reasons:

(i) to prevent or mitigate injury to other water rights, minimum perennial streamflows or aquifer water quality; or

(ii) to address any other unintended, injurious effects of the ASR activity.

(C) The Department may offer an additional public comment opportunity consistent with the notice and comment provisions of OAR 690-350-020 prior to modifying the limited license.

5) Priority/Protection. This limited license does not receive a priority date and is not protected under ORS 540.045. The diversion of water for this ASR testing under the authority of Permits S-22581 and S-34426 retains the priority date and protection of those water rights.

6) Compliance with Other Laws. The injection of acceptable water into the aquifer as well as its storage and recovery under this limited license shall comply with all applicable local, state or federal laws. This shall include but not be limited to compliance with the Oregon Department of Environmental Quality's (DEQ's) Underground Injection Control registration program as authorized under the Safe Drinking Water Act (40 CFR 144.26). Also, all pilot test discharges to waterways must be covered by a DEQ National Pollution Discharge Elimination System (NPDES) permit.

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7) Detailed Testing Plans. The licensee shall submit a detailed plan of testing for each injection well as the project develops. The licensee shall obtain Department approval of a detailed plan before injection testing at a well may begin. The Department may approve, condition, or reject a detailed plan.

8) Water Quality Conditions and Limits:

(A) The licensee shall minimize, to the extent technically feasible, practical and cost-effective, the concentration of constituents in the injection source water that are not naturally present in the aquifer;

(B) Except as otherwise provided in (C) of this condition, if the injection source water contains constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) that are detected at greater than 50 percent of the established levels (MCLs or MMLs in the cited rules), the licensee shall employ technically feasible, practical and cost-effective methods to minimize concentrations of such constituents in the injection source water;

(C) Constituents that have a secondary contaminant level or constituents that are associated with disinfection of the injection source water may be injected into the aquifer up to the standards established under OAR 333-61-030 (ORS 448.131 and .273);

(D) The Department may, based upon valid scientific data, further limit certain constituents in the injection source water if the Department finds that those constituents will interfere with or pose a threat to the maintenance of the water resources of the state for present or future beneficial uses;

(E) If during the course of ASR testing, a constituent which is regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) is detected above the 50% level prescribed in condition (7)(B) or the 100% level prescribed in condition (7)(C), the licensee shall immediately stop injection activities upon receipt of lab data and notify the Department within five days;

9) Water Quality Sampling.

(A) Injection Water. The licensee shall sample and analyze injection water for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described in the pilot test plan dated September 22, 2000. After cycle 3, if ASR injection occurs over a period to exceed 90 days, then sampling at CRW-1 will be required on a quarterly basis, the sampling interval not to exceed 90 days.

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(B) Wells. The licensee shall sample receiving aquifer water at the well prior to any storage at the well. The licensee shall sample for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described for wells in the pilot test plan dated September 22, 2000.

(C) Withdrawal of Stored Water. The licensee shall analyze water withdrawn from storage for the constituents regulated under OAR 333-61-030 (ORS 448.131 and .273) or OAR 340-40 (ORS 468B.165) as well as other constituents as described in the pilot test work plan September 22, 2000 and OAR 690-350-020(3)(b)(F)(iv).

10) Water Level Monitoring. The licensee shall monitor water levels in wells in the manner described in the pilot test plan dated September 22, 2000. The licensee shall submit a detailed water level monitoring plan for testing at each subsequent injection well.

11) Injection. Injection may not begin at CRW-1 until the well is reconstructed to meet state well construction standards.

12) Recovery. The availability of stored water for recovery is based on the following factors:

(A) Available stored water is determined on a well-by-well basis. The licensee may recover up to 100% of the quantity injected under this limited license for testing cycles 1, 2, and 3. Thereafter, the licensee may recover up to 95% of the quantity injected under this limited license during the year that the water was injected. After that year, the availability of stored water shall be further diminished each year such that the licensee may only recover up to 95% of any year-to-year storage carryover. (Data collected by the licensee may be useful in consideration of modifications to this recovery provision under the limited license.)

(B) Any water withdrawn from an ASR well identified in this limited license shall first be debited against the quantity available in the aquifer by virtue of ASR storage. When the ASR storage is depleted at an ASR well, any water withdrawn from an ASR well shall be considered a draft of natural ground water, requiring separate or additional authorization. This limited license does not authorize withdrawal of more water than was injected.

(C) The availability of stored water is a running account that is subject to determination at any time.

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13) Reporting. Except as otherwise noted, the licensee shall provide the Department a written report of the results of ASR testing for each year by February 15th of the following year. The first report shall be due in 2002 and include results from 2001. The report shall detail the several kinds of data collected during the year (including the water quality results in condition 9), analyze those data to show the ASR project impacts on the aquifer, indicate the testing/development progress made under the terms of the limited license, and account for the injection of stored water, withdrawals of stored and natural water, and the new-year carryover storage at each well.

14) Protection for Existing Users. In the event of conflicts with existing appropriators, the licensee shall conduct all testing so as to mitigate the injurious effects. In addition, the licensee shall cooperate with the efforts of the Department to protect existing water rights and the water quality of existing users that rely upon the receiving aquifer and the injection source water.

15) Use of Recovered Water. The licensee shall use any recovered water for the use allowed in the diversion authorization. Specifically, the licensee shall use any recovered water for municipal purposes as described in either permit S-22581 or S-34426. Also, the licensee shall use any recovered water for ASR testing as a non-municipal use as authorized in this ASR limited license.

16) Periodic Meetings. The licensee shall alert the Ground Water/Hydrology Section of the Department of the meetings of the licensee's technical review group of the ASR project in order that Department staff may attend and track the periodic progress of the testing project.

17) Additional Conditions on an Informal Basis. The Department may suggest additional conditions to the licensee. Provided that those conditions are agreed to and undertaken by the licensee, the Department may forego formal changes to this license. This informal process does not extend to condition reductions. These additional conditions may be part of any license renewal or permit.

18) Publicity. The licensee shall maintain a public information program about the ASR project, which may include press releases, neighborhood meetings, brochures, or other activities. This program shall include information on potential project impacts and how to report possible impacts to the licensee. The licensee shall share such reports with the watermaster within five days of receipt.

19) Other Measures. The licensee shall take any additional measures appropriate to address the ASR-related issues of landslide activation, seepage, streamflow increases, aquifer boundary determination, aquifer storage efficiency, and water quality protection so that these issues can be addressed during review of the ASR permit application.

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20) Carryover Storage. At the end of testing under this limited license, the licensee shall provide an accounting to the Department of the residual stored water based on the methods of determination given in this license. The Department shall consider this residual for carryover to a permanent ASR permit based on information, which discloses the aquifer's ability to retain stored water.


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This license is issued with proper conditions upon finding that:

- i) The proposed ASR testing will not impair or be detrimental to the public interest;
- ii) The proposed ASR testing will produce information that will adequately describe the water quality and quantity response in the aquifer and at nearby wells and springs due to ASR activities; and
- iii) The proposed use will not expand use under an existing water right.

This license shall be in effect beginning October 10, 2001, and shall expire October 10, 2006.

WITNESS my hand this 10<sup>th</sup> day of October, 2001.

  
Water Resources Department  
Paul R. Cleary  
Director