

OREGON WATER RESOURCES DEPARTMENT
OF THE STATE OF OREGON

In the Matter of Aquifer Storage and Recovery)
(ASR) Limited License Application #010,)
Washington County

FINAL ORDER
APPROVING RENEWED ASR TESTING

AUTHORITY

Oregon Revised Statutes (ORS) 537 and Oregon Administrative Rules (OAR) 690-350-0020 establish the process by which an application for ASR testing under an ASR limited license may be submitted and approved. OAR 690-350-0010 describes general provisions for ASR under Oregon law.

BACKGROUND

On April 28, 2004, the Department issued ASR Limited License #010 to the City of Tualatin. That license authorized ASR testing for five years at five wells in a basalt aquifer. The licensee requested renewal of ASR Limited License #010 on October 16, 2023. Condition 1 of ASR Limited License #010 provides for renewal pursuant to OAR 690-350-0020(5)(c), and describes the following terms for 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 license.

FINDINGS OF FACT

1. The Department received a request to renew ASR LL #010 on October 16, 2023.
2. The Department determined the renewal request was complete on November 2, 2023.
3. The Department provided public notice of the application in the Department's weekly public notice on November 7, 2023. A 30-day comment period followed.
4. The Department received no adverse comments related to the proposed renewal of the ASR limited license.
5. The Department sought comments from the Oregon Health Authority Drinking Water Services (OHA) and the Oregon Department of Environmental Quality (DEQ) related to the possible

NOTICE OF RIGHT TO PETITION FOR RECONSIDERATION OR JUDICIAL REVIEW

This is a Final Order in other than contested case. This order is subject to judicial review under ORS 536.075 and ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to OAR 137-004-0080, you may petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

renewal of the ASR limited license. Comments were received from OHA and DEQ supporting the renewal of ASR LL #010.

6. The Department evaluated the renewal request and comments and determined the proposed renewal is consistent with Condition 1 of the ASR Limited License and OAR 690-350-0020(5)(c). The licensee has demonstrated to the Director's satisfaction that further testing is necessary, and that the licensee has generally complied with the terms of the limited license. The request letter presented reasons for the extension (renewal) and also provided specific details that addressed compliance with the ASR limited license.

CONCLUSIONS OF LAW

The request to renew ASR Limited License #010 for five years is consistent with the requirements of ORS 537.534 and OAR 690-350-0020(5)(c) and Condition 1 of ASR Limited License #010. This modified license expires five years from the date of issuance of this Final Order.

ORDER

Now, THEREFORE, it is ORDERED, ASR Limited License #010 is renewed pursuant to ORS 537.534, OAR 690-350-0020(5)(c), and Condition 1 of the original ASR limited license.

Except as modified by other provisions of this license, the licensee is authorized to pursue the project schedule, monitoring, and other features noted in the accepted ASR testing plan. The plan may be modified and approved pursuant to condition 3. The project schedule in the ASR testing plan may be reasonably adjusted by the licensee to reflect the license issuance date or other delays. Features of the testing plan are provided in the application documents entitled:

City of Tualatin
Aquifer Storage and Recovery
Limited License Application

Pilot Test Plan
Prepared by
Murray, Smith & Associates, Inc.
In association with
Groundwater Solutions, Inc.
December, 2003

ASR Limited License No. 10,
City of Tualatin Testing Program
Monitoring Plan for 2024 to 2028
October 10, 2023

ASR testing must provide data and analysis that address the following:

- The appropriate target storage volume
- Loss of stored ASR water and natural water by virtue of ASR activities
- Water quality changes due to ASR activities
- Well construction sufficiency for ASR purposes
- Water level response in the ASR wells, aquifer, springs and nearby wells
- Accounting of ASR inputs, withdrawals, and storage
- Water quality testing needs
- Well hydraulics at the ASR wells

The licensee may divert up to 3,000 gallons per minute (gpm) from the Bull Run River, a tributary of the Sandy River in the Willamette Basin. The diversion rate shall not exceed the total diversion rate authorized for each source.

Source water right	Point of Appropriation (POA)
Authorization ORS 538.420	Bull Run River. T1S/R5E, Section 25, SW1/4 SW1/4.

The licensee may store up to 475 million gallons in an aquifer within the Columbia River Basalt Group (CRBG). With the approval of individual ASR well testing plans, up to five wells may be authorized. The maximum injection rate is 550 gallons per minute (gpm) per well. The maximum recovery rate is 700 gpm per well at the same five wells. The maximum storage duration is five years under this license.

Five ASR wells are authorized at the following locations:

Well Name	Well Log ID	Well Location
ASR Well No. 1	WASH 61623	1875 FEET SOUTH, 815 FEET WEST OF NE CORNER OF SECTION 34, T2S/R1W
Site 2	PROPOSED	T2S/R1W - SECTION 35, NE1/4 SE1/4
Site 3	PROPOSED	T3S/R1W - SECTION 1, NW1/4 NW1/4
Site 4	PROPOSED	T2S/R1W - SECTION 26, SW1/4 SE1/4
Site 5	PROPOSED	T2S/R1W - SECTION 25, SW1/4 NE1/4

The ASR testing project shall be operated according to the following conditions, pursuant to OAR 690-350-0020(5). Failure to comply with any of the provisions of this license may result in action including, but not limited to, revocation of the license.

- 1) **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 license or recovering stored water. The injection notice shall include the 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 license number, the location of the recovery well(s), the time of recovery, and the quantity of water to be recovered.

- 2) **Record of Use.** The licensee shall maintain a record of injection and recovery, including the total number of hours and times of injection and recovery and the total metered quantity injected and recovered. The record of use may be reviewed by Department staff upon request.
- 3) **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 license for any of the following reasons:

- (i) to reflect changes in Oregon Health Authority Drinking Water Services (OHA) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;
- (ii) to address needed technological changes as requested by DEQ or OHA to minimize constituents regulated under OAR 333-061-0030 (ORS 448.131 and 448.273) or OAR 340-040 (ORS 468B.165);
- (iii) to address a written request from the applicant for minor adjustments to the authorization in the license.

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

- (i) to prevent or mitigate injury to other water rights, instream water rights, minimum perennial streamflows or aquifer water quality;
- (ii) to address any other unintended, injurious effects of the ASR activity; or
- (iii) failure to maintain compliance with all conditions of this license.

(C) The Department may offer an additional public comment opportunity consistent with the notice and comment provisions of OAR 690-350-0020 prior to modifying the license.

- 4) **Priority/Protection.** This license does not receive a priority date and is not protected under ORS 540.045. The diversion of water for this ASR testing retains the priority date and protection of the source water rights.
- 5) **Compliance with Other Laws.** The injection of acceptable water into the aquifer as well as its storage and recovery under this 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 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.
- 6) **Detailed Testing Plans.** The licensee shall submit a detailed testing plan for each injection well as the project develops. The plan shall include, but is not limited to, water quality and water level monitoring activities, precise well locations and well construction information. The plan shall be sealed and signed by a professional(s), registered or allowed under Oregon law, to practice geology.

The licensee shall obtain the Department's approval of a detailed plan before injection testing at any well may begin. The Department may approve, condition or reject a plan. As the project installs new ASR wells, the Department will evaluate the water level monitoring plan's adequacy to describe the project's impact to the aquifer. If the Department determines the monitoring network is insufficient at that time, identification or installation of a dedicated observation well of similar depth and construction to the ASR well(s) will be required before approval of further testing.

- 7) **Well Construction.** Injection and recovery wells shall be continuously cased and continuously sealed into a competent layer directly above the target aquifer, the Columbia River Basalt Group. The wells shall meet applicable well construction standards (e.g., OAR 690-200 and OAR 690-210). Following well drilling to total depth, the wells shall be thoroughly developed to remove cuttings and drilling fluids. The licensee or their agent shall consult with a Department Hydrogeologist and the Department's Well Construction and Compliance Section before well completion to obtain approval of the proposed final casing and seal depth. The wells shall be designed to limit the irretrievable loss of injected water to unsaturated zones.
- 8) **Cuttings.** During drilling of new project wells, the licensee shall collect cuttings at a minimum of 10 foot intervals and at major formation changes. The licensee shall provide a split of the cuttings to the Department.
- 9) **Well Tag Condition for Licensee Wells.** Prior to testing, the licensee shall ensure that their wells have been assigned a Department Well Identification Number (Well ID Number). A tag showing the Well ID Number shall be permanently attached to the well. If a well does not have a Well ID Number, the licensee shall apply for one from the Department and attach it to the well.
- 10) **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 333-061-0030 (ORS 448.131 and 448.273) or OAR 340-040 (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 according to the standards established under OAR 333-061-0030 (ORS 448.131 and 448.273);
 - (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; and,
 - (E) If during the course of ASR testing, a constituent regulated under OAR 333-061-0030 (ORS 448.131 and 448.273) or OAR 340-040 (ORS 468B.165) is detected above the 50 percent level prescribed in condition (10)(B), the licensee shall immediately stop injection activities upon

receipt of lab data and notify the Department within five days. Injection may recommence after constituent levels return to acceptable levels pursuant to (B) or (C) of this condition.

11) Water Quality Monitoring. The licensee shall sample and analyze injection, receiving and recovered water as described in the currently approved testing plan.

12) Water Level Monitoring.

(A) The licensee shall monitor water levels in wells in the manner described in the currently approved testing plan.

(C) Transducer data shall be verified with quarterly manual measurements if an e-tape can be lowered past obstructions to the water level. In the event a pump is pulled, or in the case of a newly drilled project well, the well shall be equipped with an unobstructed, dedicated measuring tube pursuant to Figure 200-5 in OAR 690-200.

13) Recovery. The amount of stored water available for recovery is based on the following factors:

(A) Available stored water is determined on a well-by-well basis.

(B) The following two-step accounting method applies to each annual cycle:

(i.) The licensee may recover up to 95 percent of the quantity injected during the same water year.

(ii.) At the end of each water year, 95 percent of the storage account balance is carried over to the next year. The storage account balance consists of the sum of water not recovered within the water year and water carried over from previous testing cycles.

(D) Any water withdrawn from an ASR well identified in this 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 groundwater, thereby requiring separate or additional authorization. At no time does this license authorize withdrawal of more water than was credited by injection.

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

14) Use of Recovered Water. The licensee shall use recovered water for the purposes described in the source water authorization and consistent with ORS 538.420.

15) Annual Reporting.

(A) Except as otherwise noted, the licensee shall provide the Department a written report of the results of ASR testing for the previous water year by February 15th. Annual reports shall be sealed and signed by a professional(s) registered or allowed, under Oregon law, to practice geology. The report shall:

- Include the data collected during the water year.
- Analyze those data to show the ASR project impacts on the aquifer.
- Evaluate loss of stored ASR water and natural water by virtue of ASR activities.
- Indicate the testing and development progress made under the terms of the license.
- Account for the injection of stored water, withdrawals of stored and natural water, and the storage account balance at the ASR well(s).

(B) The licensee shall provide the following to the Department:

(i) Submission of any and all hydrogeologic data collected and reports developed for the project, including, but not limited to, cuttings analysis, video logs, geophysical logs, aquifer tests, and step tests.

(ii) Submission of digital water level data for all ASR wells and any other wells measured in conjunction with the project (in a Department specified format), including annual report data.

(iii) Submission of annual reports with locations and elevations for all project wells (actual locations of built wells and proposed locations for proposed wells) and locations and elevations for all non-project wells that have been used for collecting water levels or other data pertinent to the project (in a Department specified format).

(iv) Notification in the annual report of any changes in well construction.

(v) Associating all project well data with the Department Well Identification Number (Well ID Number), the Department Well Log ID, if available, and the project Well Name.

16) Protection for Existing Users. In the event of conflicts with existing appropriators, the licensee shall conduct all testing 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.

17) Other Measures. The licensee shall take additional measures, as appropriate, to address ASR-related issues such as landslide activation, seepage, streamflow increases, interference with nearby wells, aquifer storage limitations, and water quality protection. Further, the licensee shall notify the Department upon resolution of such issues. The licensee shall resolve these issues prior to submittal of an ASR permit application.

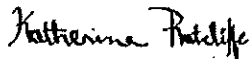
18) Access. The licensee shall allow reasonable access to ASR facilities to the watermaster and other state officials with an oversight role in this ASR project.

19) Carryover Storage. At the end of testing under this 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.

20) License Renewal. The 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 and conditions of the license.

Dated at Salem, Oregon on APR 19 2024



Katie Ratcliffe
Water Rights Section Manager
for Douglas Woodcock, Acting Director
Oregon Water Resources Department

This order was produced by Mitra Khadka. If you have questions about the Department or any of its programs, please contact our Customer Service Group at 503-986-0801 or 503-986-0810. Address all other correspondence to: Groundwater Section, Oregon Water Resources Department, 725 Summer St NE, Suite A, Salem OR 97301-1266, Fax: 503-986-0902.