

**BEFORE THE WATER RESOURCES DEPARTMENT
OF THE STATE OF OREGON**

In the Matter of Aquifer Storage and Recovery)
(ASR) Limited License Application #014,)
Umatilla County

FINAL ORDER
APPROVING ASR TESTING

AUTHORITY

Oregon Revised Statute (ORS) 537.534 and Oregon Administrative Rule (OAR) 690-350-0020 establish the process by which an application for ASR testing under an ASR limited license may be submitted and approved.

FINDINGS OF FACT

1. On November 13, 2007, Kent Madison (Madison Farms) submitted an application for an ASR Limited License for ASR testing pursuant to ORS 537.534 and OAR 690-350-0020.
2. The Department provided public notice of the application in the Department's weekly public notice on January 1, 2008. A 30-day comment period followed.
3. ASR Limited License Application #014 referenced Certificates 75107, 83692, and 83693 as source water for the proposed ASR testing.
4. The Department received comments and recommendations only from Oregon Department of Environmental Quality and Oregon Department of Human Services on the application.
5. The applicant currently holds ASR Limited License #007 and has submitted this application for the purpose of obtaining an ASR testing authorization that is larger in diversion rate, injection rate, storage volume, and recovery rate.
6. The ASR well is located in the Butter Creek Critical Ground Water Area and receives no allocation of natural water under the control provisions.

DISCUSSION

The Department coordinates ASR matters with the Oregon Department of Environmental Quality and Oregon Department of Human Services for comments and recommendations to determine the water quality implications of a project. Comments and recommendations received from those agencies were also incorporated into the consideration, conditioning, and approval of the ASR limited license request.

The Department has evaluated the application and associated comments and recommendations and finds that, as conditioned, the proposed ASR testing satisfies the rule requirements of OAR 690-350-0020(4)(d): it will not impair or be detrimental to the public interest, it 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 it will not expand the use under existing water rights.

APPEAL RIGHTS

This is an Final Order in other than a contested case. This order is subject to judicial review under 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 ORS 536.075 and OAR 137-004-0080, you may either petition for judicial review or 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.


CONCLUSIONS OF LAW

The application for and language in ASR Limited License #014 are consistent with the requirements of ORS 537.534 and OAR 690-350-0020.

ORDER

Now, THEREFORE, IT is Ordered, ASR Limited License Application #014 is approved pursuant to ORS 537.534 and OAR 690-350-0020, and ASR Limited License #014 is issued as limited by the conditions contained therein.

Dated at Salem, Oregon on March 12, _____ 2008.



FOR Phillip C. Ward, Director
Water Resources Department

This order was produced by Donn Miller.

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

AQUIFER STORAGE and RECOVERY (ASR) LIMITED LICENSE #014

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

Kent Madison
Madison Farms
29299 Madison Road
Echo, OR 97826

Telephone: (541) 376-8107

This limited license allows diversion of up to 1.78 cfs from one alluvial well near Butter Creek, a tributary of the Umatilla River, using the authorization of Certificates 75107, 83692, and 83693.

The alluvial source water well is located at T3N/R28E, Section 31, SE1/4 NW1/4.

The licensee may store up to 200 million gallons using one injection well. The maximum injection rate is 1.78 cfs.

The basalt aquifer injection well is located at T3N/R27E, Section 25, SE1/4 SE1/4.

The licensee may recover up to 1.78 cfs of stored water through the same basalt well.

The maximum storage duration is the five-year duration of this limited license.

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 pilot test plan. That plan may be amended and approved pursuant to condition (4)(A)(iii). Features of that ASR testing plan are provided in the application document entitled:

ASR Application Work Plan
Madison Farms
November 9, 2007
Revised December 27, 2007

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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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 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 licensee shall maintain a record of injection and recovery, including the total number of hours of injection and recovery, the total metered quantity injected and recovered, and metered power to the well pump. The record of use may be reviewed by Department staff upon request. The licensee shall track this information on a form available from the Department.

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 Department of Human Services (DHS) and Oregon Department of Environmental Quality (DEQ) water quality or treatment standards;
- (ii) to address needed technological changes as requested by DEQ or HDS 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;
- (ii) to address any other unintended, injurious effects of the ASR activity; or
- (iii) failure to maintain compliance with all conditions of this limited license.

(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.

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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 Certificates 75107, 83692, and 83693 retains the priority dates 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.

7) 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) or the level prescribed in condition (9)(A), 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 or condition (9)(A).

8) 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 ASR work plan.

(B) Wells. The licensee shall sample receiving aquifer water at the injection 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 ASR work plan.

(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 ASR work plan and OAR 690-350-020(3)(b)(F)(iv).

9) Nitrate Monitoring Program.

(A) The maximum concentration of nitrate in the injection source water shall not exceed 7mg/l. If the Department acknowledges that the provisions of condition (9)(F) are satisfied, the maximum concentration of nitrate in the injection source water shall not exceed 9.5 mg/l.

(B) Nitrate monitoring using a nitrate meter will be performed in accordance with the following guidelines:

(i) Licensee shall calibrate the nitrate meter in accordance with manufacturer's recommendation that a one-point (slope factor) calibration occur once per week.

(ii) Licensee shall collect and submit a recharge water sample for nitrate testing by a laboratory within one week prior to starting recharge and once per week during the recharge season. Once the variability of the field nitrate monitoring is established over at least one recharge season, and after consultation with DEQ and DHS, WRD may approve less frequent laboratory testing.

(iii) Licensee shall measure and store nitrate concentrations of recharge water using the field instrument at a frequency of once per hour during the recharge period.

(iv) Licensee shall compare field nitrate measurements to weekly laboratory measurements on a monthly basis to check the accuracy and precision of the field instrument. If the allowable variation exceeds the upper limit established in Groundwater Solutions' September 2004 report "Nitrate Meter Accuracy and Precision Evaluation for Madison Farms ASR Limited License #007" for two consecutive weekly comparisons between the nitrate meter and laboratory results, the deviation will be corrected. If the laboratory measured nitrate concentrations are greater than 6 mg/l, the recharge will be immediately terminated until the deviation between the field and laboratory measurements is corrected.

(C) Licensee shall program the nitrate monitoring instrumentation to automatically shut down recharge if the nitrate concentration exceeds 7 mg/l. If the Department acknowledges that the provisions of condition (9)(F) are satisfied, the applicable nitrate concentration becomes 9.5 mg/l.

(D) If recharge is shut down by an exceedance of the nitrate criteria, the licensee shall demonstrate to DEQ and DHS through field measurement that the recharge water does not exceed 6.85 mg/l or through the submittal of laboratory results that the recharge water does not exceed the 7 mg/l limit prior to restarting recharge. If the Department acknowledges that the provisions of condition (9)(F) are satisfied, the applicable nitrate concentrations become 9.25 and 9.5 mg/l, respectively.

(E) After each season of recharge, the licensee is free to present information to WRD for re-evaluating the allowable variation of the field instrument and the maximum nitrate value.

(F) OWRD may allow the upper level of injected nitrate concentration to be raised to 9.5 mg/l. This is contingent on a Department determination that alternative source water and treatment alternatives are not available. Further, the licensee establishes and implements strategies to reduce nitrate loading through a wellhead protection plan. The plan should be designed to produce a reduction of nitrate concentrations in the source water to below 7 mg/l over time.

10) Water Level Monitoring.

(A) The licensee shall monitor water levels in wells in the manner described in the ASR monitoring plan.

(B) The licensee shall provide the Department with logged water level data in an electronic format that is prescribed by the Department. Such data shall include both past and future data from the ASR well.

(C) In order for Department personnel to measure the static water level in the ASR well for critical area administration, no injection is allowed between February 20th and February 26th of each year. After the measurement occurs, injection may resume.

11) 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 98% of the quantity injected under this limited license during the water year that the water was injected. After that water year, the availability of stored water shall be further diminished each water year such that the licensee may only recover up to 98% of any water year-to-water year storage carryover. (For example, water year 2008 lasts from October 1, 2007 through September 30, 2008.) (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. At no time does this limited 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.

12) Reporting.

(A) Annual Water Year ASR Report. Except as otherwise noted, the licensee shall provide the Department a written report of the results of ASR testing for each water year by February 15th of the following water year. The first report shall be due in 2009 and include results from water year 2008. The report shall detail the several kinds of data collected during the water year (including the water quality results in conditions 8 and 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 the ASR well.

(B) Annual Water Year Use Report. To integrate ASR and critical ground water area administrations, the licensee shall submit data collected per Condition 3 by December 1st each year on a form available from the Department.

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13) 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.

14) Use of Recovered Water. The licensee shall use any recovered water for the use allowed in the diversion authorizations. Specifically, the licensee shall use any recovered water for the purposes described in Certificates 75107, 83692, and 83693.

15) 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.

16) 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.

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

18) Carryover Storage.

(A) At the end of testing under ASR Limited License #007, the licensee may provide an accounting to the Department of the residual stored water based on the methods of determination given in that license. The Department shall consider that residual for carryover to this ASR limited license.

(B) At the end of testing under this ASR 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.

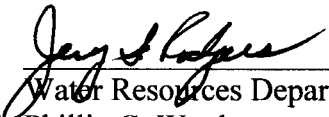
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This license is issued with proper conditions upon finding that:

- 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 March 12, 2008, and shall expire March 12, 2013.

WITNESS my hand this 12th day of March, 2008.



FOR Water Resources Department
Phillip C. Ward
Director