



Oregon

Theodore R. Kulongoski, Governor

Water Resources Department

North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

MEMORANDUM

TO: Water Resources Commission

FROM: Phillip C. Ward, Director

SUBJECT: Agenda Item G, November 30, 2007
Water Resources Commission Meeting

Recommended Action on Eola Hills Ground Water, Polk County, Oregon

I. Issue Statement

At its June 1, 2007 meeting, the Commission directed the Department to conduct a hearing to determine whether a serious water management problem exists in the Eola Hills Ground Water Limited Area and report back with a recommendation. This report recommends action items for the Eola Hills area.

II. Background

A request to further restrict ground water development in the Eola Hills Ground Water Limited Area (EHGWLA) was submitted to the Department and heard by the Commission at its June 1, 2007 meeting. The request called for elimination of the domestic exemption in the limited area citing declining water levels, inadequate yields from existing domestic wells, and the threat to senior water rights. At this meeting the Department presented a summary of the available ground and surface water information in the Eola Hills. Substantial evidence is required to justify a restriction on ground water use. The available data at that time did not support the required standard of substantial evidence in the record. The Commission directed the Department to hold a hearing to assess whether a serious water management problem exists in the EHGWLA. Further, the Department was to collect additional information in the area and return with a recommendation. The hearing was held August 1, 2007 and the public comment was open through the month of August 2007.

III. Discussion

The testimony offered during the hearing and comment period, plus the additional information collected by the Department, provides no clear evidence of a serious water management problem in the Eola Hills area. There is potential for interference between wells that develop ground water from the Columbia River Basalt Group (CRBG) aquifers and springs that emanate from

the hills, but the issue is complicated by local geology and the degree of interference, if any, is unknown at this time.

There were fifteen oral comments provided at the hearing which comprised a mix of concerns over the impact new development would have on ground water resources and concern over unnecessary restrictions on development. Some spoke of their wells doing fine over the years and having no problems, others commented on needing to be aware of their water use. One person spoke of having to lower a pump in their well and another commented about running out of water in July and “being on edge” because of a neighbor’s water use. A representative of Orchard Heights Water Association indicated their wells were not recovering like they used to and watering had been restricted to every other day. Several spoke of noticeable changes in spring flows in the area, generally decreases, though comments also included observed increases or no changes in flow.

Of the twenty-six written comments, fifteen were opposed to any administrative action in the area and seven were in favor of an administrative action limiting development; two more were not necessarily opposed to any new restrictions as long as they only target new users. Of the remaining two comments, one graciously offered a well for monitoring purposes and the other discussed an illegal use the Department has regulated. Many commented, both in oral and written testimony, of a general apprehension of future development impact on the resources. Measure 37 has generated uncertainty in the minds of many that rely on surface and ground water.

Staff compiled additional information to accompany the comments provided to the Department. Newer wells have been field located and additional water level data have been acquired. Spring locations have been mapped from water right records and then related to local geology of the Eola Hills area. It is evident that several springs in the uplands of the EHGWLA are coincident with water-bearing zones of the CRBG lavas; however, there remains a lack of data that identifies a cause and effect on surface water supplies due to ground water development.

ORS 540.435 defines the standards for a serious water management problem as caused by ground water declines, unresolved user disputes or frequent water shortages. Declaration of a serious water management area allows the Commission to require installation of a totalizing measuring device and annual reporting of water use. Although there is apprehension about future development, the testimony and available data do not support the finding of a serious water management problem area.

In summary, within the EHGWLA the CRBG aquifers are limited to exempt uses and five year permits for irrigation and fire protection. Other aquifers, comprised of surficial deposits and the underlying marine sedimentary rocks, are not constrained by the limited area restrictions. Water level data available at this time do not support a contention of a declining resource. Interference between wells or frequent water shortages do not appear to rise above normal limitations in this geologic environment (that is, not all wells produce adequate yields and many decline in efficiency over time, requiring rehabilitation or replacement). The CRBG lavas are deeply incised, and thus, to some degree, are hydraulically connected with surface water. To restrict

ground water uses requires substantial evidence of a problem. Evidence of a broad problem does not exist at this time.

III. Optional Action Items

The Eola Hills area requires further collection of data to document whether problems beyond individual wells exist or whether spring discharges are influenced by ground water development. Further, by their stratified nature (high permeability water bearing zones separated by low permeability lavas), the CRBG aquifers are prone to leakage from upper aquifers to lower through well construction that opens the borehole to both zones. These shallow water bearing zones are correlated to a number of springs in the EHGWLA and leakage from these shallow zones may be at the expense of surface water supplies. Following are four action items suggested for the EHGWLA:

A. Special Area Well Construction Standards: Case and Seal New CRBG Wells to Within 100 ft of the Bottom of the Well

Through rulemaking, adopt a special area well construction standard requiring all new wells in the Eola Hills CRBG to have a continuous grout seal from land surface to within 100 feet of the bottom of the well. This allows well owners to develop an aquifer while reducing the opportunity for the borehole to act as a conduit for flow from one aquifer to another.

B. Special Area Well Construction Standards: Measuring Tubes in New Wells

Water level data are inaccessible in many wells due to depth to water and obstruction caused by pump installation. Through rulemaking, adopt a special area well construction standard to require a dedicated measuring tube be installed at the time of pump placement in new wells and at the time of pump replacement in existing wells. This will consistently provide access to water levels in the EHGWLA aquifers.

C. Develop a Voluntary Water Use and Measurement Program

As evidenced by turnout at the public hearing and resident's interest in water supply in the EHGWLA, a voluntary program of water level and water use data collection could be implemented for the area. The Department has had success elsewhere in the state with training concerned residents in collecting and sharing data from their own wells. The program, which requires oversight by the Department to assure data veracity, is a useful means of collecting information beyond what Department staff could accomplish and provides residents with knowledge of their local resources.

D. Continue Monitoring of Water Supplies

Continued work would be necessary to determine whether broad water supply problems develop in the EHGWLA. Such work includes expansion of the current well net and installation of continuous water level recorders; continue ongoing field location and data collection on new wells in the area; identifying springs that are suitable for flow measurement; and testing of hydraulic interference between wells and springs, if feasible. Accomplishment of these tasks will need to be within existing staff resources.

The above action items represent a long-term commitment to monitoring in the EHGWLA. If adopted they will facilitate the assessment of water supply problems in the EHGWLA. Accomplishment of this work will be dependant upon staff resources in the Technical Services and Field Services Divisions. Periodic updates to the Commission would be anticipated.

IV. Alternatives

The Commission may consider the following alternatives:

1. Direct staff to further investigate the issues identified and report back at a future meeting.
2. Direct staff to begin the process of adopting a serious water management problem area.
3. Direct staff to pursue the identified optional action items for the Eola Hills Ground Water Limited Area.

V. Recommendation

The Director recommends that the Commission follow Alternative 3 and direct staff to pursue the identified optional action items.

Douglas Woodcock
503-986-0847

