

# *RHS* Ralston Hydrologic Services, Inc.

**GROUND WATER CONSULTING AND EDUCATION**

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June 4, 2008

Ken Neely  
Idaho Department of Water Resources  
P.O. Box 83720  
Boise, ID 83720-0098

Dear Ken:

The purpose of this letter is to provide you with the final deliverable for Contract #CON00738 that provided technical assistance for the Spokane Valley – Rathdrum Prairie Hydrologic Project. The title of the project proposal was “**Hydrogeological Analysis of the North End of Coeur D’Alene Lake and the Spokane River from the Lake Outlet to the Post Falls Dam.**”

This letter contains a list a recommended locations and completion depths for test wells based on the results of our study. The purpose of the test wells is to obtain data to support an improved understanding of leakage into the Spokane Valley – Rathdrum Prairie aquifer from the north end of Coeur d’Alene Lake and from the Spokane River within Idaho. The list of recommended test wells presented below is on the results of the study and on discussions during the meeting with IDWR and WDOE personnel in the IDWR Coeur d’Alene office on May 7, 2008. Additionally, I met with Bob Haynes in the IDWR Coeur d’Alene office on May 28, 2008 to discuss my recommended well locations.

Well location criteria include: 1) penetration of the quaternary flood sediments at a location where they are saturated and 2) sites where public ground may be available for well construction. Six new wells are recommended along with use of an existing well. The results of the response function study are important relative to the location of test wells. The study results were not available for review and thus are not considered. The individual sites are described below. General well locations are shown on Figure 1.

## **Well #1**

The first new well is located near the IDWR well constructed on the NIC campus. The target depth of the well is 200 to 250 feet with the dual objectives of characterizing the hydrostratigraphy and gaining temporal water-level and water-temperature data near the deepest portion of the bedrock trough at the mouth of Coeur d’Alene Lake. The well should be located near the existing test well if site conditions allow. Alternatively, the well could be located on available green space on the NIC campus.

## **Well #2**

The proposed location of the second new well is in the City of Coeur d’Alene Riverstone Park. The park is located on the north side of the Spokane River at a location

approximately north of Blackwell Island. The target depth of the well is 100 to 150 feet with the objective to complete the well in a saturated portion of the Quaternary flood sediments overlying Tertiary sediments and/or basalt. The new well should be located as near to the river as possible.

### **Well #3**

The proposed location of the third new well is near the north bank of the Spokane River near the old Atlas Mill site. This site is located about one mile northwest of the second proposed new well. The target depth of this well is 100 to 150 feet with the objective to complete the well in a saturated portion of the Quaternary flood sediments overlying Tertiary sediments and/or basalt. The availability of public land for well construction access in this area is unknown.

### **Well #4**

The proposed location of the fourth new well is within a small park located on the north bank of the Spokane River adjacent to the Mill River housing development. The target depth of this well is 100 to 150 feet with the objective to complete the well in a saturated portion of the Quaternary flood sediments.

### **Well #5**

A potential well site exists south of the Spokane River in the shallow embayment near where the Cedar Creek enters the river. The proposed location of the fifth new well is near the production well(s) for the Greensferry Water District. The target depth of this well is about 100 feet with the objective to complete the well in a saturated portion of the Quaternary flood sediments. Potential problems with this location include interference because of operation of the production well(s).

### **Well #6**

An existing well constructed by the University of Idaho appears to provide a monitoring opportunity. The well was constructed near the Spokane River with a reported depth of 79 feet. Based on available information, the UI well is not being used and may be available for installation of a data logger.

### **Well #7**

The proposed location for the sixth new well is near the north bank of the river immediately east of the Idaho – Washington state line. The well probably would need to be drilled on the plateau at an elevation about 30 to 40 feet above river elevation. The target depth of the well would be about 100 feet with the objective to complete the well in a saturated portion of the Quaternary flood sediments. The availability of public land for well construction access in this area is unknown.

Please contact me if you have any questions. Thank you for the opportunity to work on this project.

Sincerely,

Dale R. Ralston PhD PE PG



Figure 1 Location Map for Proposed Test Wells