Contract Amendment No. 2

Hatt Slough Springs Groundwater Source Evaluation

RH2 Project No. STA 413.016

In accordance with our Professional Services Agreement for the Hatt Slough Springs Geologic and Geotechnical Evaluation dated January 25, 2013, this is an authorization to revise the project Scope of Work as described below. The work will be performed and invoiced using the terms and conditions listed in the Original Agreement, plus previous amendments and/or agreements.

Please see the attached **Exhibit A** and **Exhibit B**.

The engineering fee authorization will increase by $12,362 for a total authorization amount of **$37,386.**

Please sign this authorization in the space provided below and mail or fax to RH2 Engineering, Inc., 22722 29th Drive SE, Suite 210, Bothell, WA 98021. FAX 425-951-5401.

RH2 Engineering, Inc.	City of Stanwood
Tony V. Pardi	
Signature	Signature
Tony V. Pardi	
Print Name	Print Name
Vice President	
Title	Title
5/24/13	
Date	Date

Exhibit A
Scope of Work
Amendment No. 2
City of Stanwood
Hatt Slough Springs Groundwater Source Evaluation

May 2013

Background

The City of Stanwood's (City) Hatt Slough Springs source of supply facility is located south of the City limits and Hatt Slough, near the base of a steep slope. The springs are situated on City-owned property in an undeveloped area that is accessed by an unpaved road from Marine Drive. A 900-foot section of the access road is affected landslides that impede access to the spring facilities. Four spring collection areas are located within the property. Each collection area has an infiltration piping gallery that delivers water to a 300-gallon settling tank. Water is conveyed by gravity through pipes from each of the settling tanks to the pump building, which houses the mechanical, chlorination, and electrical equipment. The Hatt Slough Springs source was constructed in 1934 and was granted a maximum instantaneous water right of 1,125 gallons per minute (gpm) in 1939 under water right S1-02432CWRIS. However, the current maximum supply rate of the springs is approximately 250 gpm.

RH2 Engineering, Inc., (RH2) evaluated alternatives to rehabilitate the springs to improve the flow into the spring collection system. This analysis yielded that there was a limited potential for improving spring production beyond 350 gpm. RH2 also evaluated the option to relocate the point of withdrawal for the springs to improve the reliability of the source of supply and maintain the City water right, which is the City's preferred option.

Given the ongoing risk of landslides that impede the access road to Hatt Slough Springs, the limited potential for improving spring production above approximately 350 gpm, and the likelihood that Washington State Department of Health may eventually classify the springs as groundwater under the influence of surface water, RH2 recommended that the City evaluate transferring the point of withdrawal for the Hatt Slough Springs water right to a new source of supply. Several source alternatives were explored, including drilling wells on the upland to the south of the springs, exploring for a shallow or deep aquifer below the Stillaguamish River floodplain, and increasing the withdrawal at the existing Bryant Well Field site. Costs and risks precluded each alternative except for evaluation of potential groundwater sources in shallow aquifers in the area between Hatt Slough Springs and the City (the proposed study area).

This scope of work will evaluate the potential existence of a groundwater source in the proposed study area capable of producing a sustainable supply of potable groundwater of rates between 350 and 500 gpm from single and multiple wells. The evaluation will include proposed exploration locations, identify estimated costs for drilling and testing favorable sites for groundwater supply, and guidelines for transferring the Hatt Slough Springs source to a new point or points of withdrawal.

Task 1 – Evaluate Potential Groundwater Sources

Objective: Evaluate the groundwater conditions in the study area and identify potential aquifers for potable supply.

Approach:

1.1 Review available geologic maps and groundwater reports, and prepare conceptual understanding of hydrogeology of the study area. Prepare a geologic profile across the study area. Identify potential aquifers in the study area and estimate potential groundwater yield and groundwater quality based on available groundwater information.

1.2 Evaluate and identify up to three (3) preferred groundwater source exploration targets based on preliminary assessment of factors such as groundwater supply potential, property ownership and access, costs for developing a well or well field, and permitting and water rights processing.

1.3 Prepare a technical memorandum summarizing subtasks 1.1 and 1.2 and recommendations for well development.

RH2 Deliverables:

- Technical memorandum describing the findings of the evaluation and recommendations.

Provided by the City:

RH2 has access to the City's existing utility maps, as well as access to the Snohomish County Online Property Information website and aerial photos via Google Maps. The City shall provide new, additional, or updated information for the following items to facilitate the project. RH2 will rely on the accuracy and completeness of the data furnished by others including, but not limited to, mapping, geotechnical reports, plans, and utilities information.

- Available geologic, geotechnical, and soil investigation reports for the study area.
- Information available for the study area including, but not limited to, plans, aerial survey and photographs, parcel maps, right-of-way boundaries, and utility maps.

Schedule

The work for this project is anticipated to be completed in 2014 to comply with City budgets. The schedule for this project may be modified as mutually agreeable to both parties.

EXHIBIT B

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Estimate of Time and Expense

	Description / Classification	Total Hours	Total Labor	Total Expense	Total Cost
Task 1	**Evaluate Potential Groundwater Source**				
1.1	Background Information Compiliation	18	$ 3,078	$ 77	$ 3,155
1.2	Groundwater Source Evaluation	24	$ 4,086	$ 153	$ 4,239
1.3	Prepare Technical Memo and Recommendations	30	$ 4,700	$ 268	$ 4,968
	Subtotal	**72**	**$ 11,864**	**$ 498**	**$ 12,362**
	PROJECT TOTAL	**72**	**$ 11,864**	**$ 498**	**$ 12,362**